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74 Union Street, Aberdeen, as soon as possible, and not later than 15th May.

Vol. I.

January, 1894.

No. 2.

THE
Cairngorm Club Journal.

EDITED BY
ALEX. INKSON M'CONNOCHIE

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ISSUED TWICE A YEAR.

PUBLISHED BY
THE CAIRNGORM CLUB.

AGENTS:
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BEN MUICH DHUI FROM GLEN LUI BEG.

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JANUARY, 1894.

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SGURR NAN GILLEAN.

BY WILLIAM TOUGH, M.A.

“ Lovest thou mountains high,
Peaks to the clouds that soar,
Corrie and fell where eagles dwell,
And cataracts dash evermore ?

Then go to the Isle of Mist ”.

THE main feature of the Coolins from the geological point of view seems to be *gabbro*. The peculiarities of this rock are, first the splendid surface it presents to the climber, and, next, the felicity with which it adapts itself to the production of all that is characteristic and grand in nature's architecture. In both these respects it puts Aberdeen's favourite rock entirely in the shade. The truth of this seeming heresy is apparent to every visitor to the Coolins, for there comparison between the two formations is forced upon the mind and cannot be avoided. One has only to glance from the tame, round summits and grassy slopes of the Red Hills to the towering pinnacles and dizzy precipices which frown darkly upon them from the other side of narrow Glen Sligachan, or to contrast their gently-swelling shoulders with the splendid ridge of Blath Bheinn (Blaven) in the southern background, to acknowledge—be he artist, climber, or simple tourist—the incontestable triumph of *gabbro* over granite.

The headquarters for the Coolins is Sligachan Hotel. This remote and lonely, but comfortable, house stands near the head of Loch Sligachan, at a point about nine miles south

of Portree, and two from the base of the nearest (northern) ridge of Sgurr nan Gillean. A "bus" runs from Portree every morning in summer, and as there is also both rail and telegraphic communication between the two places, solitary Sligachan maintains constant touch with the busy world outside.

It was a lovely forenoon near the beginning of August when Mr. Brown and I arrived at the hotel. For the last few miles of our drive the beautiful, sharp-peaked summit of the mountain whose fame had attracted us to the distant "Isle of Mist" had been full in view, standing out clearly and invitingly against the dark blue of a cloudless sky. We fell in love with it at first sight—succumbed to its powerful fascination without a struggle. The noble ardour of the mountaineer in presence of a peak worthy of his ambition came upon us with power, and, combined with the consideration that such another day in the fickle weather of a Skye August might long be looked for in vain, decided us to lose no time in making our attack. In such circumstances to resolve is to do. We threw on our "knickers" in haste, and, without even waiting for lunch, which was almost ready, set off with vigorous stride across the boggy moor.

The top of Sgurr nan Gillean (3169) may be described as the point of junction of three great rocky ridges, which ascend, roughly speaking, from the W., N., and S.E. The last of these affords the ordinary tourist route to the summit, and by it we elected to make our first attempt. A cheerful impression concerning the existence of a track across the moor holds a place, as we afterwards learned, in the minds of the Sligachan populace. Something of the kind open to detection by the keen eye of an Indian scout *may* exist, but for us "it was not". If we ever strayed into it at all, we did so in ignorance, and did not remain there long. For making, to the best of our ability, straight towards the depression, or "Saddle", visible in the sky-line of the ridge near its lower end, we held too far to the right, and, at one point, had to negotiate some steep, slabby rocks well up on the flank of the mountain. Safely over this

ugly place, we at once plunged into the fatiguing region of the scree slopes. These, however, being fortunately of no great extent, were soon surmounted. A lively scramble over huge boulders, piled at a considerable angle, followed, and shortly brought us, in a state of semi-fluidity, to the point which had been the object of striving so far.

Our reward was immediate and out of all proportion to the insignificant exertion which had placed it within our reach. The savage grandeur of the scene spread out before us must baffle all attempts at adequate description. Far below, looking almost level from our lofty standpoint, lay the boulder-strewn floor of the great theatre of Lota Corrie. Almost exactly circular in appearance—its only outlet, Harta Corrie, being hidden from view by the intervening mass of Sgur-na-h-Uamha on the left—it gave to the beholder the strong and ever-growing impression of looking into the crater of some vast extinct volcano. All around, in gloomy magnificence, rose the stupendous and nearly perpendicular crags of the Black Coolins, their serrated ridges crowned by the picturesquely jagged pinnacles so characteristic of the range. Above the lower peaks, at fairly regular intervals, towered the well-marked summits of Sgurr nan Gillean, the Bhasteir, Bruach na Frith, Bidein Druim nan Ramh, and others, whose names, if ever I knew them, now form one of the volumes of my forgotten lore. The whole prospect offered, to eye and mind, such a picture of dark and rugged sublimity as I did not think even Skye could have produced.

At a short distance above the "Saddle" the ascent is best continued by keeping downward to the left or Lota Corrie side of the ridge, where the going is comparatively easy. Until a point some sixty or eighty feet below the summit is reached, there is nothing to try the "grit" of even the veriest tyro in mountaineering; but then matters change somewhat. All at once the angle of ascent becomes much more acute, while the rocks put a marked restraint on the former freedom of their invitations to hand and foot. The result is, that of the tourists who "do" Sgurr nan Gillean, not a few omit altogether to tackle this last stretch,

consoling themselves with the knowledge that they have been *practically* on the top—a fact which, in the course of time, seems not infrequently to develop itself, by some mysterious process of evolution, into the totally different one that they have been *actually* there.

The extreme summit of Sgurr nan Gillean consists of a table-shaped rock extremely limited as to its length, and still more so as to its breadth. It is of course surmounted by the inevitable “stone-man”. On every side but one the fall is so steep that a moderately vigorous spring, in almost any direction, would relieve the world-weary mountaineer of all further toils, troubles, and ambitions.

What little time could be afforded was spent in admiring the unequalled view from the summit, one of the most extensive within the compass of the British seas. Its very vastness prevents its leaving any clear-cut impression on the mind. Hence, notwithstanding my having seen it twice in the most magnificent Skye weather, and that is not saying little, it dwells chiefly with me as a somewhat vague memory of limitless expanse and glorious colouring. Still, I think, it must be here, on the summit of his favourite mountain, more than anywhere else in the island, that the stranger can realise the strength of the longing which burst from the heart of Alexander Nicholson, in the pathetic words of his lovely song:—

“ My heart is yearning for thee, O Skye,
Dearest of islands ” !

No one, be he a native of the “ Great Central Plain ” itself, who has looked forth upon the glory of mountain, sky, and sea, in the pearly light of a brilliant autumn evening, from the peak of Sgurr nan Gillean, but will find an echo to that cry in his own heart. The Coolins, like the Alps, though, of course, to a less degree, cast a glamour and a charm over the whole life of the mountaineer who once makes their acquaintance—a charm powerful, never-failing, lifelong ; the charm of the everlasting hills, which no man can define, and no man express.

Now, the ascent of Sgurr nan Gillean by the ordinary route, though so well worthy of being made on its own

account, was undertaken by us rather in the light of a reconnoitring expedition than as a serious piece of "work". In our hearts we cherished the hope of reaching the summit by the northern ridge—over the now well-known "Pinnacle Route"—and wished to survey our line of approach from above. The Pinnacle Route derives its name from the fact that it leads the climber over a series of four narrow, sharp-pointed peaks, of gradually increasing height and difficulty, to the summit of the fifth. These peaks are numbered (though, unfortunately, not always) from the lowest upwards. The first three have no "proper" names, and are always referred to simply as the first, second, and third pinnacles; the fourth is known as Knight's Pinnacle, while the fifth is Sgurr nan Gillean itself. The Pinnacle Route offers to the moderately experienced cragsman a delightful sample of what Skye can produce in the way of interesting rock-work. Probably no finer scramble can be had in any part of the British Islands. Carelessness can nowhere be indulged in without the danger of a serious mishap. The "sporting" character of the route forms its chief charm; but for the man subject to giddiness, as for the novice in rock-climbing, "sporting" reads "perilous". To meet their case, I would at once substitute the word "danger" for "charm", and add to the former all the emphasis at my command. What is easy and pleasant to one must on no account be attempted by all. I therefore seriously say to the beginner, especially if he be alone, "No road this way"! Even in the company of experts, and perfectly secure against any serious accident, some of the more distinctly sensational places would possibly be found to put a tolerably severe strain on his nerves.

Previous to our final dead set at the Pinnacle Route, we twice made a *sortie* as far as the top of the first pinnacle. On the first of these occasions we took the route adopted later on. On the second we went up a gully leading from the bottom of the Bhasteir Corrie. This we found easy, with the exception of one decidedly bad bit, which cost some little trouble, but which could have been avoided by choosing one of the other

branches into which the gully divides lower down. On the summit of the ridge the wind was raging with a fury of which its strength in the lower region gave but little indication. Great masses of snow-white mist scoured like drift over and between the pinnacles; now partly revealing, while magnifying ten-fold, their rugged outlines, and next instant shutting them entirely out from view. The scenic effects were exceedingly grand; but as the force of the wind made the maintenance of an erect posture a matter of no little difficulty, while the driving rain soaked us to the bone, we were soon glad to seek once more the lee side of the sheltering ridge. The next morning opened clear and sunny. Everything promised an exceptional climbing day, and the promise was kept to the full. With the single exception that the too great glare of sunlight proved pretty trying to the eyes among the rocks, the weather remained perfect. The brilliantly clear sky was undimmed by a single cloud, and not a zephyr arose to disturb the serene calm of the atmosphere. Our second ascent of "The Young Men's Peak" thus took place under unusually favourable auspices, and will, I am sure, long remain in both our memories as one of the most enjoyable of all our mountaineering experiences.

Crossing the burn by the stepping-stones at the game-keeper's cottage, we retraced our steps of the preceding day, and, clambering over the steep slabs of a sort of subsidiary ridge, came full upon the great rocky buttress forming the base of the first pinnacle. This buttress, nearly perpendicular at first but sloping off towards the top, everywhere affords excellent holds for both hands and feet. The continuation of the route over the first and second pinnacles is simply and literally a walk. It is at the bottom of the third pinnacle that the real climbing begins. But though, from this point onward, the utmost care has to be exercised, no serious difficulty is encountered until one comes face to face with the problem—how to reach the bottom of the col between the third and fourth pinnacles. This is a real difficulty, and I may at once say that the descent at this point forms the only actual *mauvais pas* in the whole line

of the Pinnacle Route. After crossing the rather shakyl-looking rock which forms the extreme summit of the peak (height 2920 feet), a position is reached a few yards from the end of the ridge where the recognised route turns abruptly to the right. Here a drop of some ten feet over a slightly overhanging rock to the steep ledges of the Bhasteir Corrie has to be made. A man with a long reach might manage to do this without aid; but as the result of a mistake would certainly prove fatal, the use of the rope is advisable in any case. We were, of course, provided with that safeguard against accident, and used it. There is, I believe, a way to avoid the drop altogether, by descending into the Corrie from a point nearer the top of the pinnacle. But we did not know of this safety route at the time, and somehow failed to discover it for ourselves.

Knight's Pinnacle, with its double-peaked summit (highest point 3000 feet), gives in itself a splendid choice of really fine rock climbing. The usual route from the col to the top lies along a ledge to the right. It is plainly enough marked, and why we did not take it I am totally unable to explain. Be that as it may, we, rather stupidly, as I now think, kept up the rocks to the left. Smoother than any we had yet encountered, and dipping rapidly downwards, the holds they afforded were about as unsatisfactory as can well be imagined. Nevertheless, with a determination that would have been praiseworthy, if it had not been idiotic, for we quickly became convinced that we were off the proper track, we stuck to our "variation". Fortunately the slope soon eased off a little, and we presently got into country where the eyelids were no longer considered necessary as a means of adhesion, but only after doing the stiffest bit of climbing we met with on the whole ridge.

The descent to the col, between the fourth and fifth pinnacles, is easily enough accomplished by following the nailmarks on the rocks. If this is not attended to, the true line may be missed, and a nasty drop of at least a dozen feet have to be negotiated, as Brown, who was descending first, found to his cost. Above the col the rocks of Sgurr nan Gillean rise sheer and impracticable. A short, but at one

place awkward, descent has therefore once more to be made into the Bhasteir Corrie, in order to circumvent them. Once this is done the rest is easy. Half-an-hour's steady climbing, guided by an occasional small cairn, should suffice to place one by the side of the stone-man on the summit. The last part of the ascent is most easily accomplished by crossing the crest of the western ridge, about twenty yards to the right of the culminating peak, and keeping to the Lota Corrie side till the top is reached. The whole ascent from the hotel should take from about four to six and a half hours, according to the qualifications of the climbers.

Now, just a few practical hints to conclude :—(1) June, and, next to it, July, are probably the best months for Skye. August is apt to turn out windy, wet, and misty. Mist in itself would prove no bar to the ascent of the Pinnacle Route, but a strong wind greatly increases both the difficulty and the danger. (2) The climber should take at least two pairs of strong "knickers" with him. A pair of thick leather gloves for those who have tender fingers would also be found useful. The effects of a single day's work among the *gabbro* rocks, both on clothing and skin, are sometimes deplorable. (3) A rope, or better, a couple—60 foot lengths—should always form part of the climber's impedimenta. Good climbers would probably not require to use it more than once over the whole Pinnacle Route, but those who cannot class themselves as such, should "tie up" at the foot of the third pinnacle, and not untie until the summit is reached. (4) The best map is the 6 in. O. S. Map, but it is clumsy. A good handy article is *Mr. C. Pilkington's "Corrected Map of the Coolins"*, price 6d., post free, from John Heywood & Co., Deansgate, Manchester. (5) The compass is almost useless among the Coolins, owing to the strongly magnetic character of the rocks. (6) Articles on climbing in Skye have appeared from time to time in the *Scottish Mountaineering Club Journal*. They should be consulted before any "plan of campaign" is formed.

TWO DAYS IN GLEN MUICK.

BY WILLIAM SKEA.

To view aright the beauties of "Dark Lochnagar" one must climb Cairn Bannoch. This opinion is supported by several well-known mountaineers who have written on Lochnagar, and, indeed, it was by their advice that at eight in the morning of the third of June the writer set out alone to make the discovery. The programme mapped out for the day was as follows:—"From Inschnabobart to Spital of Muick, Loch Muick side to the Black Burn, Broad Cairn, Cairn Bannoch, Fafernie, Tolmount, Glen Doll, Glen Clova, cross the Capel Mounth, back to Inschnabobart". But, as sometimes happens with the best-laid schemes, this one went "agley". The weather seemed unfavourable to far seeing. A heat haze hung about the hill-tops, and balloon-like clouds rolled up from the south-west. After passing Lochend shooting-box our mind was made up to first see how things looked from the Capel Mounth. We ascended on the left bank of the first burn, on Loch Muick side, to the two thousand feet plateau, where, it is said (and we are inclined to think it quite possible), one may drive in a dog-cart for hours without danger to the springs!

This plateau, though for the most part grassy, has bog for subsoil. Where the grass of the plateau is broken—and where is it not?—the moss is laid open, frequently to considerable depths. Fortunately, even at the date mentioned, the continued drought was beginning to tell on these high grounds, and so it was quite easy to pass dry-shod over most of the moss holes. One never dreams of malaria up on the hill-tops, and these brown and black mosses are not without interest. Their margins are haunted by birds and other living creatures, while their interiors contain the contorted remains of what we presume may be called part of the ancient Caledonian forest. These remains crop out in great variety; and of their antiquity there can be little doubt.

The view from the Capel Mounth was not propitious. Clouds possessed the glens south and west, and rain was apparently falling in Glen Clova. Eastward there was a view of the hills about Glen Mark and Glen Lee, while in the north-east Mount Keen was distinctly outlined. Lochnagar, in the north, was well seen all day, although the heat-haze blurred the sharpness here and there during the forenoon. The west was black in the distance, nothing like a good view being obtained beyond the Clunie hills and Glas Maol. This was not encouraging.

The day was young, however, and we set our face to the westward, taking the tops of "the Hillocks"—the Dog (2400) and the Sandy (2511)—in our route. From the latter we fetched a bee line to the Broad Cairn, tacking right and left to avoid the lagoons that feed the Black Burn. As we passed on to the apron of the hill, Glen Doll vomited up a heavy cloud, and during a brief shower we took shelter and luncheon in the lee of one of the huge blocks of stone which nature, in some of her "wooden dreams", has left on the side of the Broad Cairn.

We ascended to the cairn (3268) in fine weather. The only living creature visible on the summit was a brown hare, which refused to run from us beyond a dozen yards. From Broad Cairn on a clear day the view is very interesting and far-reaching, among the sights being the Bell Rock Lighthouse. From the south-western shoulder we looked down upon the leafy surroundings of Bachnagairn, and had a peep of the Doll.

An hour and a half after leaving Broad Cairn, we stood by the stony pinnacle of Cairn Bannoch (3314). This view was the jewel of the day's outing, an outing which was pleasant from first to last. The White Mounth (*i.e.* Lochnagar), now in sharp outline, loomed up before us in the north, in the light and shadow of the afternoon sun. At our feet lay the Dubh Loch, black and still as death. The grim lofty precipices which surround the loch give an eerie and awful aspect to the place. From this wild corner of the Royal Highlands there stretches out towards the north-east one of the most fascinating scenes in Britain—we mean the

valley of the Muick. From the grand old rocks beside us, to the quaint brown Coyles, which shut in the view at the Dee end of the glen, a brilliant panorama of mountain and flood unfolds itself—the White Mounth on yonder side, the Black Mounth on this. The valley between the Dubh Loch and Loch Muick, though wild in the extreme, is picturesquely clad with birches, among which wimples and pours the Allt an Dubh-loch. At the lower end of this rocky defile the eye is again delighted with the Glasallt Shiel in its fresh setting of shaggy larches—an oasis in a desert, a gem of royal beauty. In the middle of the picture Loch Muick stretches out its black waters, the blackness being intensified by the many long narrow beaches of yellow sand which gild the fretted margin. After scanning with admiration the bold hillsides which rise suddenly from the shores of the loch, the eye returns to the “frowning glories” of the Dubh Loch, and only the knowledge of the flight of time, and the memory of the “lang Scotch miles” that lie between us and our temporary habitation, can persuade us to retrace our steps.

On our way back to Glen Muick by the Bachnagairn path we explored the two magnificent corries which descend into Loch Muick opposite the Glasallt Shiel, both of them wild and romantic. From the top of these fine corries a grand view is obtained of the Glasallt Falls, behind the Shiel, where the burn, in its precipitous descent from the top of Lochnagar, leaps down in one white straight streak a distance of two hundred feet or more.

But the loch itself is full of interest. Its sides are rich in flowering plants and ferns, while its waters teem with trout. Besides some of the commoner waterfowls, we watched the ways of the ouzel and the heron. In the evening a large flock of wild geese visited the loch, causing quite a flutter among the collies, and we were told of the doings of a black-throated diver that day while we were absent on the mountain tops.

On the following morning—now “the glorious *fourth* of June” of our calendar—we set out for Lochnagar, the party now mustering five. The writer was the only man of

the party who had not previously ascended the mountain from this side, so that his experience of the expedition was fresh and fraught with new pleasures. All the other hillmen present "knew the ropes", as the sailors say. Two of them are familiar with, and possess special knowledge of, the mountain and its surrounding views. This was consequently a red-letter day in the writer's mountaineering experience.

After passing the Gelder and Glasallt paths, we left the path which ascends "the Ladder" and struck away to the right. We made tracks for the cairn on the side of the Meikle Pap which marks the spot where the late Prince Consort killed his last stag. The cairn, which bears the inscription "Albert, 18th Oct., 1861", stands at an altitude of 2500 feet, in ground of the roughest mountain top kind. From this height the view to north and east may be said to begin in earnest. The same may be said of the ascent!

Between the Prince's Cairn and the top of the Meikle Pap our party halted thrice—nominally to admire the gradually expanding view, but really to cool down. The weather was warm. There had been a heavy shower as we passed Alltnaguibhsaich Lodge, and the indications augured more showers. Fortunately there was a breeze from the south-west which cleared the valley of the Dee, the clouds being still high. Nevertheless, we encountered a heavy, but brief, shower of rain as soon as we reached the Meikle Pap cairn (3211). The two knowing ones of the party found here a pleasurable surprise for their companions. The Meikle Pap possesses the most remarkable "cairn" of all the eleven summits of Lochnagar. It is of nature's building, and resembles nothing more than the ruins of a gigantic Druid temple—huge blocks of granite (mostly elongated square masses) are huddled together or tilted atop of each other on the summit of this peculiar "Pap". At one part of the "cairn" a large square aperture (about 8 feet high by 4 feet wide) has been formed by the tilting and poising of a group of these enormous stones. We were requested to scramble up and have a peep through this great rude open portal. The effect is marvellous. Ascending as we did

direct from the Prince's Cairn we had not seen the loch from which the White Mounth takes its popular name; and, standing at this side, Lochnagar is still concealed by the large stones which form the "cairn". Through the open portal referred to the loch and the overhanging precipices suddenly appear before the onlooker, as if seen through a vast stereoscope. We shall never forget the weird picture. It was like a bit from Doré's illustrations of Dante's "Inferno". The snowfield over the Black Spout Corrie, the beetling grey precipices, with their dizzy summits in lurid outline against the sky, and the inky loch beneath, combined to leave a weird and lasting impression upon the mind of the beholder. Had this been the only sight of the outing it alone were good value for eight or ten hours of mountain climbing; but other sights of similar grandeur were yet before us.

The view from the Meikle Pap—west, north, and east—was magnificent. The Cairngorm mountains were specially clear. Large quantities of snow patched all the principal summits—Cairn Toul, Ben Muich Dhui, Cairngorm, Beinn a' Bhuid, and Ben Avon—the title peak showing an apparently unbroken snowfield. The Glengairn mountains were experiencing an electric storm, their tops enveloped in dense clouds that were, to all appearances, pouring down rain in torrents. Further eastward the Buck of Cabrach, Tap o' Noth, and Bennachie were clearly outlined; while the sun was shining bonnily on the kirk of Tarland in the middle distance. From Crathie to Craigendarroch the valley of the Dee was beautifully defined, as were every path and burn in the brown deer forest which formed the expansive foreground of the picture. The shower had not lasted ten minutes, and again the sun shone brightly upon us as we surveyed the West Highlands of Aberdeenshire from our lofty perch. In the clear light of the early afternoon it seemed but a stone's throw from the Pap into the ferny depths of Clashrathan, or on to the sturdy shoulder of Conacheraig.

The Meikle Pap, however, is an isolated peak, and this being so, like Napoleon's "ten thousand men", we had

marched up a hill and must straightway march down again. We had scorned the beaten track hitherto, and still nothing conventional could attract us. When we turned our faces toward the long ridge of Cuidhe Crom and the precipices, and Cac Carn Beag, that—high though we were—still overshadowed us—we resolved to cross the Lochnagar hollow and ascend to the main summit over the shoulder of the “Black Spout.” A party under the guidance of Morgan, the Ballater ghillie, were toiling, labouring up “the Ladder” when we began our descent into the “Inferno” which lies at the foot of the great corries. The task we had before us dwarfed such commonplace mountaineering as that in which the party mentioned were engaged, and put our limbs and our lungs through a pretty considerable ordeal. The basin of Lochnagar and its mountainous surroundings form as complete a wilderness of shattered rocks as any that may be named among the fastnesses of the Deeside Highlands, and those who would traverse it in safety must needs mind their p’s and q’s, or at any rate they should keep a sharp look out for foothold.

We had almost descended to the margin of the loch when our attention was arrested by what, to most of us, sounded like thunder-claps. But the Highlander of the party looked up into the Red Corrie and declared that “that was not right”! All eyes were at once bent in this direction, and all necks were craned to scan the top of the precipice. It was as the Highlander had diagnosed. There, on the skyline overhead, were three men moving. They seemed no bigger than fox-terriers, and certainly, as our Highland friend thought, they were behaving like puppies—throwing stones over the precipice to hear the reverberating noise thus produced. That noise, our friend explained, would be heard by deer several miles away; and it sounded very like musketry firing on a large scale.

The view from Cac Carn Beag was gratifying in the highest degree, considering that the clouds were driving overhead; while at no fewer than half a dozen distant points at once we could see that showers were falling, though none fell on us. Perhaps the furthest outlined eminence recog-

nised was the Lomonds of Fife, whose long ridge and two dome-like, or rather tower-like, heights were distinctly seen in the south-east. Standing in the "corridor" of this grand natural mountain cairn, looking over the breastwork stones, the balmy mildness of the atmosphere was generally remarked. Here, at an altitude of 3786 feet, the air—even in the breeze—was as soft as the "was'lan' winds" of Burns's native Kyle.

We eat our lunch at the "Poachers' Well"—two minutes' walk from the cairn; and hardly had we got the solids "washed down" our throats when a notable change came over the weather. Quite suddenly the mild atmosphere was replaced by a wind so cold that the hardest member of our little company had to indulge in something like violent exercise in order to keep up the circulation of his blood. It was gloomy as we made our way to the top of the "Black Spout", and when we stepped down into the snow-bed which drips into the corrie, sleet began to fall. This was rapidly followed by a rattling shower of hail, which lasted only five minutes, after which the cloud passed off the mountain. It was well we did not indulge in the pastime of pushing stones down the "Spout", for when we went to the western edge to view the opposite precipices, we perceived Morgan and his party scrambling down the throat of the corrie to Lochnagar side—apparently engaged gathering ferns or searching for cairngorms. As we learned afterwards, Morgan had had a narrow escape of his life in the course of that passage—one of his party who had lingered above him in the corrie having unwittingly dislodged a stone, which grazed Morgan's head in one of its subsequent rebounds!

While still standing on the western brink of the "Black Spout", facing about north-east by east, and gazing into the rugged profundity of "Dark Lochnagar", we had the good fortune to witness a rainbow of phenomenal brightness, form, and proportions. It began (so far as we could see from our position) on the west side of Lochnagar. At anyrate, we saw its massive and brilliant colours between us and the margin of the loch, immediately at the bottom of the

“Spout”. It passed round the inner extremity of the loch by the foot of the precipices, up the stony hillside beyond, passing exactly over the apex of the Meikle Pap. Intersecting the greater Conacheraig, it crossed the belt of sunshine to northward, in which a moment before we had made out the kirk of Tarland, and rounded westward by the mountains of Glengairn, re-entering the Dee valley near Crathie, and coming back across the forest by the Gelder Shiel to the inner side of the lesser Conacheraig, within a short distance of the foot of the mountain on which we stood. The phenomenon was not therefore a bow, or arc, but almost a complete circle. The breadth of the belt of colours, which were of extraordinary brilliancy, appeared to be about twenty feet. About fifty feet above it a second rainbow appeared, but it was faint of colour, and only developed to the proportions of “a tooth”, reaching from the precipices to the east shoulder of the Meikle Pap. The “bow” took six minutes to develop and disappear; its greatest brilliancy lasted for one minute, and the vanishing time was 3.20.

We walked back along the corrie tops towards Cuidhe Crom, and had a splendid view to northward from the head of the “Red Spout”, Ben Rinnes being then added to the other familiar “pows” in sight. As we have indicated, it was a day of sudden atmospheric changes; and, while standing over the “Red Spout”, there came up such a blast of cold, north wind from the depths below us that we were ruthlessly hurstled back upon the hill-top, the wind developing great strength in its passage up the funnel-like “Spout”. This was all the more peculiar, that only half an hour before we had taken shelter in the snow cup of the “Black Spout” from an equally chilly south wind.

We descended by “the Ladder” in fine weather, and shall not soon forget “the glorious *fourth* of June”, nor, indeed, any of the varied experiences of our two days in Glen Muick.

MAY-DAY ON THE OCHILS.

BY HUGH BOYD WATT.

FROM their central position in Scotland, few hills are better known than the Ochils. Their prominence is acknowledged in their name—the early Celtic people, who first named them, being satisfied to distinguish them by the simple word *Uchel* (Welsh), meaning high, from which is derived the present name. Forming part of what Professor James Geikie calls “The Northern Heights facing the Highlands”, the other main portion of which is the Lennox Hills and the Sidlaws, they occupy a commanding position in the physical geography of the country, and, historically too, they and their neighbourhood claim memories and associations which only a district closely in contact with national life and story can hope to possess. Nor are more romantic elements awaiting; and at the present day they have their own poet, who, in melodious Scotch verse, sings their praises and delights.

Last May-day I spent in wandering on the western portion of these hills, starting from Stirling on a morning which seemed even to exceed in fineness the many fine mornings of that exceptionally fine spring, and which gave promise of a glorious day for the hills—a promise, however, which was scarcely fulfilled. The Forth being crossed, I made my way by Causewayhead, and passed behind the Abbey Craig and the Wallace Monument, and at Airthrey chose the road leading past Logie Church, thus meaning to turn the flank of the hills, and take them from the rear. Facing here is the most precipitous part of the hills, which nowhere else show the same bold front, with crags, rocks, and gullies, as at this S.E. corner. Probably it is also the best known portion, both to the casual traveller as a prominent landmark in Central Scotland, and to those who, taking advantage of its accessibility, make its closer acquaintance by visiting it. The highest point is Dunmyat (1375), which can be easily climbed by way of Menstrie Glen, or approached from the north by what is only a walk over moorland. I well

remember my own pleasure, after coming to this top in the last-named commonplace way, to find the entirely different character of its south face, and the enjoyment of a scramble on the way down in front of me. I fancy this S.E. face might furnish some amusement to rock-climbers. Going onwards I left this on my right hand, and passing through the beautiful piece of woodland behind Logie Church, soon came to the Sherriffmuir road leading north along the open hillside. Approaching Cauldhame, the elevation had become high enough to bring some white peaks in the north into view; but the day was already overcast, and before long a cold shower fell. Immediately after it had passed a cuckoo called—the first I had heard this year. At the inn, which stands near the junction of the Dunblane road—just in the locality of the so-called battlefield of Sherriffmuir—I left the road, and after having a look at Wallace's Stones (one only now in the perpendicular), proceeded upwards by Glen Tye, the old Wharry Burn being on my right hand, and soon found myself on my first top, at an elevation of about 1400 feet. From there I made over Mickle Corum (1955), and so on to Blairdenon Hill (2072), on whose eastern slopes the head-waters of the Devon rise. This river fairly divides the Ochils into two, and follows such a devious course that when debouching into the Forth it is only $5\frac{1}{4}$ miles from its source, although it has actually flowed 34. Well may Burns sing of it as the "winding Devon"! I was now above the 2000 feet line, but the easy grass slopes and rounded hill-tops made it difficult to reckon that any climbing had been done. A wild, but short, hail-shower added some variety to the proceedings, and a golden plover rising at my feet from her nest, in which lay four finely-marked eggs, was quite an incident on the way. A restricted view of the Forth to the south had also now opened out, and Strathearn lay beneath me to the north. Benbuck, on the top of which are a few loose stones, was next reached, and from there some twenty minutes' walking took me to the top of the highest point in the Ochils, Ben Cleuch (2363). It had been a very easy ascent, even to the extent of bordering on the uninterest-

ing; and, as a route, does not possess the attraction which the Alva Glen way has. By the latter route, one midwinter day, I had climbed this hill, but then everything was deep in snow, and the spot was not recognisable to my eyes in the altered conditions. To-day a shower of hail and snow does pass over me, but I see no snow lying on the hill, not even Lady Alva's Web, which is the fanciful name given to a wreath of snow, frequently seen so late as the month of June, at the bottom of a ridge of rock near the summit. Some rocks crop out round about, the first I had met during the day; and a roofless stone hut stands near by. Owing to the now overcast atmosphere, the view to the north was quite obscured; and while the Links of the Forth were well seen, only the towers of the great bridge could be faintly discerned, and nothing beyond was visible. This was something of a disappointment, for, from its position, Ben Cleuch, for its height, commands one of the many "finest views in Scotland". That old mountaineer, Rev. Thomas Grierson, ascended this hill in 1849, and gives the following account of the view in his "Autumnal Rambles among the Scottish Mountains":—

"The whole range of the Grampians, from Ben Lomond to Beinn a' Ghlo, is quite visible. . . . The more remarkable mountains within sight on this occasion were Ben Lomond, the Cobbler, Ben Ledi, Stuc a' Chroin, Ben Vorlich, Ben Cruachan, Ben Laoigh, Am Binnein, Ben More, Ben Chonzie, Ben Lawers, Schichallion, and Beinn a' Ghlo. These, with innumerable others of inferior note, were quite visible, some of them marked by streaks of snow. In a still clearer day Ben Nevis may also be seen, and I have no doubt of Ben Muich Dhui and Lochnagar being within reach of the eye, though I could not make them out on this occasion. . . . The view on all sides of this mountain is interesting, but the Highland district incomparably the most so. The whole horizon is serrated with mountain peaks from S.W. to N.E., their distances varying from 20 to 60 miles as the crow flies. The most remarkable were Ben More, Ben Vorlich, and Ben Lawers with its elegant conical top and huge bluff rocky eastern shoulder, much resembling Meal Fuarvounie on Loch Ness".

The mountaineering parson, under more favourable circumstances, would also have seen Merrick, Goat Fell, Glas Maol, Mount Battock, the Lammermuirs, Arthur's Seat, the Pentlands, Hart Fell, and Tinto. The neighbouring

points of the Law (2094) and King's Seat Hill (2111) promising no variety in the way of climbing from what I had experienced, I turned my face westwards and soon reached Craighorn (1940), a top marked by a low turf mound with a few stones in the centre. I may note that most of the tops which I visited during the day were cairnless. I was now on a rougher part of the hills, although their pastoral character still clung to them, and found that the head of Alva Glen is a deep V shape, with an abrupt descent of some 400 feet from the spot where I reached it. At the burn the aneroid gave 1200 feet as the altitude where I crossed, and the head of the glen forms quite a Border "hope". In climbing up the other side, for the first and only time in the day I had to use my hands, and thus, according to authority, crossed the line which distinguishes walking from climbing. On the west side of the glen I made Bengenzie Hill, which is surmounted by a small built cairn, and possesses some character of its own, having rock and talus slopes to the east and west. Going onwards I soon reached Colsnaur Hill (1832), also crowned by a cairn, and having a small quarry-like rock face. The evening had been growing fairer and fairer, but in spite of a strong disinclination to "quit wandering" in the placid and exhilarating atmosphere of these easy summits, time, as represented by a train at Stirling, pressed hard, and I had to descend. Steep but easy slopes took me rapidly down to the Menstrie Burn, which I crossed at a spot made lovely and fragrant by birch, rowan, and other trees, and, following a grassy track along the hillside, passed between Menstrie and the steep, broken cliffs behind it, through the finest display of whin in flower which I ever remember seeing, and so to the road at Blair Logie, from which place an hour's walking took me to Stirling. The time for the round which I have described, all done in a very leisurely fashion, was 10 hours; and from what I have seen of the Ochils, they are worth giving more hours to yet.

BY GLEN DOLL AND THE CAPEL:

A SATURDAY-TO-MONDAY TRAMP.

BY W. J. JAMIESON, M.A.

THE only apology the writer has to plead for submitting the following notes of an excursion over ground that has been already often described, is the hope that they may bring home to some of his fellow-members and others, whose purses are light and leisure scanty, the amount of genuine satisfaction that may be derived from even so brief a holiday as that indicated in the title. A perusal of the inspiring narratives by two prominent members of the Club of wanderings among the Benchinnans had awakened a desire to see something of that mysterious region, and a longing, of ancient date, to explore the beauties of Glen Doll—so happily preserved to the mountain-lovers of Scotland by the energies of the Scottish Rights of Way Society—had also, if possible, to be gratified. A little study of the map and of the narratives referred to showed that both these objects could be attained between mid-day of Saturday and the afternoon of Monday following, and the plan of campaign was laid accordingly.

The walk in the golden afternoon of early autumn along the picturesque road from Ballater to Braemar served to get the desk-cramped limbs of the city worker into something like form for the next two days' programme. Braemar was crowded, as it always is in September, but ultimately accommodation was secured for the night, which, if strictly limited in extent, was quite sufficient for the modest wants of a solitary pedestrian.

The village was left next morning about half-past seven, just as the first signs of life among the cottages were becoming apparent. The weather was perfect for walking, though not very promising for distant views, the air being cool and pleasant, with a faint haze blurring the outlines of the horizon. Two human figures were descried a little way ahead on the road by the babbling Clunie, but they dis-

appeared in the vicinity of Auchallater, and not another living soul was encountered all that day till the public road was reached in the late afternoon at Braedownie in Glen Clova. The charm of solitude alluded to by Mr. Bryce in the first number of the Club's Journal can be realised to perfection in this upland region—the change from town bustle and din is absolute and complete.

The lower part of Glen Callater is tame and uninteresting; the scenery becomes picturesque only above the Loch—a desolate little sheet of water with one small solitary cottage by its margin. From the form of the basin in which it lies, and the stretch of flat marshy ground at its southern end, it seems probable that its area has been at one time more extended than at present. After passing the loch, the track runs along the side of the burn that feeds it, distinct enough in places, in others scarcely to be detected. There is no possibility of going astray, however, all that has to be done is to follow the course of the stream. By-and-by this leads into a sort of *cul-de-sac*, or hilly amphitheatre, with no visible outlet save the way by which we have come. Here the stream forks, and the western branch can be seen at no great distance falling in a ribbon of foam sheer over the precipitous northern front of the Tolmount. The eastern branch descends more gradually, running at one point through a very pretty little gorge, quite a cañon in miniature. The traveller can walk straight up the bed of the stream if he wishes to inspect this bit of scenery more closely, or may find easier going by bending a little to the left. A short pull up a steep, grassy slope brings him to the top of the ridge at the scarcely noticeable depression between the Tolmount proper and the Knaps of Fafernie. Curving round to the south-westward, the cairn on the Tolmount is soon reached, with the ruins of a small hut in close proximity. A wire fence runs along the summit of the Benchinnans for miles, and would prove an invaluable guide to the wayfarer who might find himself overtaken here in mist. There is no peak on the Tolmount, only a slightly rounded elevation; the bold north corrie is the only feature that gives it dignity as an individual mem-

ber of the chain. Notwithstanding this, there is, in clear weather an extensive view in all directions; but on the particular day in question, the prospect to the north and west was obscured by cloud and haze, the Cairngorm group looming up as a shadowy mass upon the horizon. The rolling country to the southward was much clearer, and the well-marked cone of the Broad Cairn was very conspicuous to the east.

On the advice of an enthusiastic admirer of the Benchnans a detour was made to the neighbouring summit of Cairn na Glasha. The distance between the two tops is trifling; but the hollow between them presents a bit of particularly nasty going. The ground consists of peaty mire—not deep moss hags like those on the ridge between Clochnaben and Battock, but a uniform deposit of black ooze interspersed with grassy tussocks which afford at best a precarious footing. If you miss one of these, or slip off it after a jump, you plunge into this sticky mixture to the ankle, or, it may be, to the knee. Sometimes for a few yards together there are no tussocks, and in such cases, presuming that you have judiciously followed the line of the wire fence, you may escape “lairing” by doing a little “Blondin” business, which, if laborious and a trifle undignified, is probably the lesser of two evils. Once out of this slough of despond, the ascent of Cairn na Glasha is very easy. Near the cairn the wire fence is replaced by a “dwarf stone wall with neat iron railing on top” (as the architects’ specifications say with regard to villa residences) which looks incongruous enough on this remote peak, some ten or a dozen miles from anywhere. The haze here had the same blurring effect on the distant view as at the Tolmount, but the fine ravine of Canlochan, with the precipitous cliffs of Monega, forms a picturesque feature in the foreground, and the wild solitudes that stretch around in all directions as far as the eye can see give a sensation of buoyancy and freedom as refreshing as the ozone of the pure untainted mountain breezes.

Glas Maol, a little to the south-west of Cairn na Glasha, could be very easily visited from this point, and by the tourist making for the Cairnwell road or the Spital of Glenshee

would be taken as a matter of course; but the writer resolved to leave it for some future occasion, and to strike back at once for the head of Glen Doll. Repassing the region of bog, the line was taken by the left shoulder of Tom Buidhe direct for the sources of the White Water, which trickles quietly for a mile or two through a grassy country with a very gentle fall. An immense herd of deer was seen here on the slopes of Tom Buidhe, high up on the sky line. As the tourist strolls through this comparatively tame tract, wondering, perchance, to what Glen Doll owes its reputation, and when the fine scenery of which he has heard so much is to appear, all of a sudden a strange thing happens. The stream along which he has been sauntering disappears—"takes a flying leap into space", as one writer has well described it. The chasm into which it vanishes is not perceived until it is at one's very feet, and, owing to a peculiar elbow in the cliff, the bottom is not visible from the brink of the precipice. Skirting along the edge to the westward, another cleft is found yawning in front almost at right angles to the first, through which the Fialzioch Burn tumbles to join the White Water. A slight detour up stream enables this to be crossed, and then a steep descent leads to the foot of the fall. A fine view of the rugged gorge is to be got from a flat rock in mid-stream, and a pause was made here to admire the beauty and unusual character of the surroundings. A scramble up the crumbling bank on the other side, brings us out at the top of Jock's Road, as the old bridle-path through Glen Doll was called. This track is now hardly visible, but a good pony road has been made by the proprietor at a higher level on the hillside, which, however, unauthorised visitors are probably not expected to take advantage of. The beginning of Jock's Road could perhaps be more easily reached by keeping on the left bank of the White Water; but it is not lost time to make the circuit above described, as the view from the foot of the fall should on no account be missed.

The picturesque grandeur of Glen Doll can now be fully realised; and it was certainly well worth the long and expensive fight it cost the Rights of Way Society to pre-

serve this fine bit of Highland scenery free and open for the tourist and the mountaineer. Glen Doll proper is only some three or four miles long, but those three or four miles are magnificent. On the left the steep sides of Craig Mellon bound its whole extent; while on the right the frowning precipices of Craig Maud, the mural rampart of the Dounault, and the grand corries of Craig Rennet, Mayar, and Driesh seem the giant escarpment of a vast natural fortress.

Some two and a half miles below the fall, the White Water turns sharply to the left, and thereafter the Glen gradually becomes more open in its character, till at length it debouches into Glen Clova at Braedownie. Here the romantic part of the day's walk is at an end. Four miles of good and comparatively level road brings to view the little wayside inn at Milton of Clova, now known as the Ogilvy Arms, where very comfortable quarters are to be had for the night. Even this out-of-the-way hostelry, however—only a few years ago quite primitive and unpretentious—is keeping abreast of the times, and now boasts many modern conveniences. It has also its due and regular complement of summer residents, who seem to form more of a united happy family than can be the case in the larger caravanserais of better known tourist centres.

Nine is the *table d'hôte* breakfast hour on Monday morning; but this is rather too late for the pedestrian who wishes to make Ballater by mid-afternoon; so, perforce, an earlier meal has to be disposed of in solitary state. The day breaks cool and grey, but the light haze soon disappears, and by nine o'clock the sun is shining in a sky of cloudless blue. The four miles of prosaic road has to be retraced; but now the route, instead of turning aside into Glen Doll, lies for about a mile further along the east bank of the South Esk, till the ascent of the Capel Mounth is commenced. The beginning of the track is not very discernible; it strikes off about the streamlet marked as the Cald Burn on the one-inch map. The writer went on a little too far on the Bachnagairn path, but caught up the proper route at the Capel Burn. The ascent of the Mounth from the Esk

valley is not so trifling an affair as might be supposed from the mere height of the plateau—at least, not in a broiling sun, with no vestige of cloud in the sky and no available shelter of any kind. There is an excellent zig-zag path; but the steady, unrelenting pull of some 1400 feet, without so much as a couple of yards on the level, and in the sweltering heat, takes it out of one a bit, and the summit is very welcome when it comes. It is certainly hard to realise that, within three short weeks after this experience, there must, by all accounts, have been two or three inches of snow on these very heights—but such is the glorious uncertainty of our British climate!

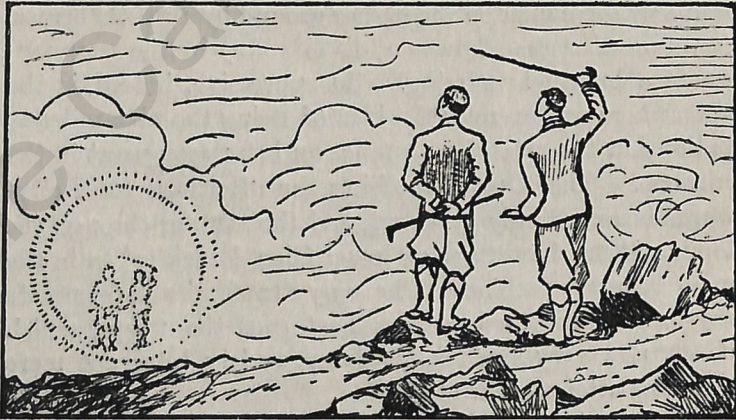
It is advisable before turning one's back upon the Esk valley to halt for a little to view the rocky sides of Craig Mellon and Driesh from this elevated standpoint. The former presents as precipitous a front to the Esk as to the White Water; large slides being visible here and there where masses of crumbling rock and detritus have quite recently fallen sheer away under the disintegrating influence of frost and rain. The west side of Glen Clova, too, is quite steep and rugged enough to form an effective background to the picture. Facing about to the north, the traveller, bound for Ballater, finds his road lie for four or five miles on almost a dead level. Poles are planted at short intervals, to serve as guides when the hills are covered with the winter snows, but just now such landmarks are superfluous, for there is not the slightest possibility of going astray. The upland is a complete solitude save that it is dotted over with a multitude of blackfaced sheep, the boldest of which stop for a moment to survey the unaccustomed stranger with an inquisitive and somewhat supercilious stare, then with a stamp of the fore-foot and an indignant toss of the head, scamper off, obviously in high dudgeon at the intruder's presumption. The walk along the Capel Mounth would be tame enough, were it not for the excellent view that is to be had from it of the whole of the Lochnagar range. Away to the left, the Broad Cairn on the near side of the dividing valley again becomes a conspicuous object; but it is the fine group of Lochnagar peaks that constitutes

the main attraction, standing out sharp and clear in the brilliant sunlight. The panorama is ever shifting, and the relations of the various summits to each other change continually. From nearly every point of view, however, the twin Paps are specially prominent, and very graceful the delicate outline of the Meikle Pap, in particular, appears against the sky. From no other point can these elegantly-shaped tops be seen to greater advantage than from this opposite ridge. Between the Meikle Pap and the Cac Carn Beag can be descried, far in the distance, the dark mass of Ben Avon, easily recognisable by its row of rocky protuberances.

Presently Loch Muick comes into view, the white buildings of the Glasallt Shiel at its upper end gleaming in the sun. Half the surface of the loch itself is silvered by the noon-tide beams, while the other half is thrown into dark purple shadow by the overhanging flank of Lochnagar, rising abruptly from its very edge, barely leaving space for the Queen's carriage drive along the margin. Soon the long winding descent commences. Spital of Muick is reached, and, to all intents and purposes, the traveller is again in the lowlands. All this time the heat has been intense, though tempered somewhat on the higher ground by a gentle breeze. Down in the glen, however, it is sultry in the extreme; scarce a breath is stirring. So oppressive, indeed, is the atmosphere as to render the idea of doing the nine miles to Ballater at the rate of four miles an hour repugnant in the extreme. The idea of catching the afternoon train citywards is accordingly given up, and the saunter through the birch and fir plantations of lower Glen Muick taken in the most leisurely fashion. The only drawbacks to complete enjoyment are the excessive heat *and* the wasps, which latter, now very much in evidence, rudely interrupt more than one attempted siesta.

Ballater is reached with an hour or two to spare ere the departure of the last train; and had the day been cooler, or the start been made a little earlier in the morning, it would have been the easiest thing in the world to arrive in Aberdeen in good time for afternoon tea.

The small charges for bed and breakfast at Braemar and at Clova, plus return railway fare to Ballater, represent all the necessary outlay. A packet of sandwiches and a flask suffice for the tramp across the hills; and a trifle over forty-eight hours gives ample time for the whole excursion. These things considered, with the variety of wild and magnificent scenery—crag and precipice, loch and pine forest, dark ravine and breezy mountain plateau—all to be admired and enjoyed at liberty and at leisure, in the most stimulating and exhilarating of atmospheres—it may be safely maintained that in few more pleasant ways can a Saturday-to-Monday holiday be spent than in a ramble over these remoter uplands.



THE SPECTRE OF THE BROCKEN.

See page 88.

BEN CRUACHAN.

BY HERBERT C. BOYD, M.A., LL.B.

FROM the scattered cottages clustering by the shores of Loch Etive that bear the name of Bonawe, the lofty peak of Ben Cruachan, peeping over his massive shoulders, is conspicuous—or, I should rather say, *one* of the peaks of the many-topped Ben. Stob Dearg is its name, and its height is 3611 feet; the principal summit, which is 3689 feet above the level of the loch, being situated about half a mile further east. The River Awe, issuing out of the loch of the same name in the Pass of Brander, winds round the base of the mountain, and flows into Loch Etive at the Ferry of Bonawe. To cross the river, you follow the Dalmally road some 3 miles up, through charming woods of birch and hazel, to the Bridge of Awe. Such, at least, is the usual route taken in the ascent from Bonawe or Taynuilt; it is the most direct, and it is also the easiest; and this was the way that we took one bright morning towards the end of August.

From the Bridge of Awe to the free hillside it is but a step, and our feet were at once treading the grassy slopes, and bearing us waist-deep through the bracken. Emerging from the fern, we presently struck the Allt Cruiniche, a picturesque ravine, broken up by scattered rocks and trees, through which the burn clamours in many a dashing waterfall and thundering cascade. The fascination which this pretty bit of scenery exercised over one of our number, whose love of the picturesque and gaiety of spirit were in greater evidence than his agility on a hillside, was amusing to observe. With what unceasing pleasure, after a stiffer pull than usual, he would return to the absorbed contemplation of the beautiful dell at our feet! Or, at times, if we happened to be making our way through some interesting little bog (especially if a flat-topped block of granite were conveniently near), it would be a lovely patch of marsh moss that would claim his undivided attention for five minutes!

And then, refreshed and reinvigorated, he would marshal his forces once more to the assault.

The beauty of the early morning which had gladdened our hearts before starting, was by this time, however, sadly overcast, and a dull vaporous haziness crept over the face of sky and landscape. To the west, instead of an ever-extending prospect of heather hill and sea and island, the higher we ascended, the thicker grew the haze, blotting out entirely the distant view ; above us the clouds had slowly gathered and settled on the summit and were steadily creeping down ; and when, after crossing the burn and traversing some rather flat marshy ground, we at length stepped on to the granite, we were soon wrapped in their dense folds.

The transition from heather or grass to the rough granite is always delightful to the mountaineer. The foothold is security itself. The crunch of the hobnailers on the gritty texture of the rock is delicious in his ears. By this time, further, the sultry air of the lowlands is left below, and the pure mountain breeze blows life and refreshment into the lungs, and imparts new vigour and elasticity to the muscles. Our pace rapidly quickened ; we strode and sprang from block to block, delighted to encounter, now and again, masses of masonry of a larger and more rugged build, that called into play the hands as well as the feet, and while the enjoyment of the exercise was at its keenest, the cairn loomed through the mist, and we stood on the summit of Stob Dearg.

And here a magnificent surprise awaited us. Instead of a dense white wall meeting the eye in every direction and shutting out all beyond (as had been the case during the ascent, and as we had expected to find on the top), though behind us we could see nothing, to the north and east we saw below and around us, the clouds wreathing and eddying in great billowy masses, and breaking in soft, fleecy waves against the precipices that form the northern face of the mountain. On the other side of the great corrie in this northern face, called Coire Chat, wherein the mist seethed, as it were in some mighty cauldron, towered the proud peak of Cruachan—now wrapped in a close-folding curtain of

mist, as the clouds swept up in their solid battalions and blotted it from sight; now rending them asunder, and soaring majestically above them, their snowy banners streaming from its rugged sides. And through the massive portals of the clouds, the eye leapt to Loch Etive winding far below among the recesses of the hills, which heaved and tossed in wild confusion, stretching away, range behind range, into the distant north. Conspicuous in this mountain wilderness burly Ben Starav buried his bare brow in a canopy of cloud. Beyond, the Buchailles of Etive, Bidean nam Bian, the shattered crags above Glencoe, and the great Blackmount summits, seemed shorn of their peaks by long level layers of cloud. And to the north-east, the eye shot out in its widest sweep, and revelled in an exquisite study of colour—the sky in the distant horizon was clear and blue, the valleys and moors in the middle distance were chequered with alternating sunshine and shadow, and flecked with sparkling lochs and tarns, and the far-off mountain ranges clad themselves in hues borrowed from heaven itself.

A steep descent of several hundred feet brought us to the ridge that connects Stob Dearg with the principal summit of Ben Cruachan. The walk along this ridge is singularly fine. The northern face is one continuous precipice, and forms the great corrie, Coire Chat. The path is strewn with granite blocks which give the climber abundant exercise, and ever and again huge gashes in the mountain side open out at his very feet, and carry him, in imagination, at one bound far into the depths of the corrie, the weirdness of the effect being wonderfully enhanced by the necessity of occasionally crossing a ledge overhanging the abyss, with the mist swirling below.

A short scramble placed us on the summit and above the clouds, and the fine view we had from Stob Dearg delighted our eyes once more. Stob Dearg itself, as seen from this point, is rounded in outline, the great precipice on the north seemingly gouged out of the mountain side, losing itself midway in curling cloud wreaths, then plunging from their entanglements into the glen beneath. The air was delightfully mild and refreshing, and half an hour

slipped rapidly away in identifying, with map and compass, such hills as were visible through the constantly-shifting barriers of the clouds. At last we turned our thoughts to the descent. A late start had deprived us of the time necessary to do the other peaks of the mountain, and the majority of our number, with visions of dinner floating before their minds, favoured a return by the direct route to Taynuilt. But the more I saw of the northern face, the more I was fascinated by its charms; and so my friend G. E. Thomson and I resolved to make the descent into Glen Noe, returning home by the shores of Loch Etive. The party accordingly divided, and we set out by the ridge that runs N.N.E. from the summit.

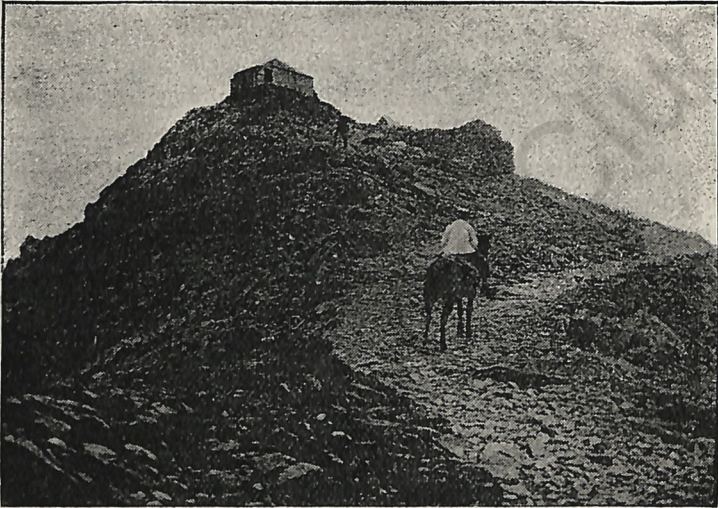
The ridge descended on either hand with great abruptness; to our left was Coire Chat, now clear of clouds, to our right was Coire Caorach, separating us from the next peak, Drochaid Ghlas, and filled with a sea of cloud that sharply terminated on the crest of the ridge. Suddenly I observed a small rainbow of circular form on this cloudy embankment to our right, a little distance below us, and hardly had I called Thomson's attention to it when the colours brightened, a bright halo appeared in the centre, and on the halo were projected, with perfect clearness, our two figures, larger than life. It was the first time I had had the good fortune to witness this singular phenomenon, known as the "Spectre of the Brocken", and with intense interest we regarded it while it reproduced with perfect fidelity every movement of our bodies and every gesture that we made. At first it was rather faint, but as the sun shone with increasing strength through the thick cloudy screen overhead, it grew brighter, and the figures projected on the halo increased in distinctness of outline. Then, as the clouds intercepting the sun's rays again thickened, it would slowly fade away, presently to return, however, even clearer than before; and thus with varying intensity, it gratified our eyes for several minutes, until, gradually growing fainter and fainter, it finally disappeared. We lingered a little longer, on the chance of its reappearance, but the sun was now too effectually obscured by the clouds to give much hope for

this, and so, turning our backs on the ridge, we cut down hill.

The slopes were very rocky, and many a fine clamber had we over the crags and boulders with which they were strewn—now cautiously traversing smooth slippery slabs of granite that offered but precarious footing—now scrambling down a short precipitous face, and dropping on to a grassy ledge, only to find another of the same character awaiting us; and after a good deal of this rough work—the most sporting and enjoyable part of the whole day—we at length found ourselves scampering over the heather towards the burn. Crossing the burn that romps its merry way down a small tributary glen from Coire Chat to Glen Noe, we struck a short distance up the opposite hillside, kept a horizontal course round the shoulders of Meall Riaghain until we were near the mouth of Glen Noe, and then, racing down hill, we joined the rough track that follows the windings of the loch. The afternoon had, after all, turned out magnificent, and the scenery along this part of the route was extremely beautiful. Charming woods reached down to the water's edge, and the loch, sparkling in the sunlight, and mirroring the reflections of the clouds and the surrounding hills, stretched away to its far limit among the mountains. A delightful walk along these beautiful shores, over the granite slabs that constitute the path for a considerable part of the way, and through the long heather in which it occasionally lost itself, brought us at last to the ferry across the Awe. A few minutes then sufficed to take us home to a sumptuous meal—enjoyed all the more after our capital day's tramp.

SNOWDON.

By JOHN FLEMING.



Valentine & Sons, Photographers.

SNOWDON, THE LAST HALF MILE.

In the summer of 1889, in the month of June—that very hot, dry, and dusty June which we all remember—I spent a week in North Wales; one of the most enjoyable weeks I ever spent. It included an ascent of Snowdon, which I am about to describe, but I hope to be excused for giving a few notes by the way of my journey there, as they may be of service to some “Cairngormer”, who, like myself, has ascended the more familiar Scottish Bens and sighs for fresh fields and pastures new.

I left the north in the morning and slept the first night in Chester, spending the succeeding day wandering about this most interesting old city. Chester dates back to 700 B.C. The Romans made it a great seat of arms and walled it round and round, and visitors can to this day make a tour of the city on the wall-tops. Chester also boasts a very ancient and interesting cathedral, but the most

attractive characteristic of this really intensely interesting old town is the structure of the old buildings with their long "Rows" over the street floor—pleasant lounges on a hot or rainy day. The wares there spread out partake largely of the "curio" order, and many a Yankee dollar is left behind (Chester is a great shrine of Americans), and we have no doubt but that now and then "bang will go a Scottish saxepe"!

I had determined to make Bettws-y-Coed (the station in the wood) my centre during my sojourn in Wales, so took train for Bettws, *via* Rhyl and Llandudno, in the afternoon, skirting for the first half of my journey the English Dee (how different from the Scottish!), and then passing, after reaching the open bay, many beautiful watering-places. This is the mail route to Holyhead, and is a very busy road. Changing carriages at Llandudno Junction the route is almost due south up the valley of the Conway. After leaving the sea coast the scenery grows in beauty until Bettws is reached, and *it* is a spot to dream of. It is quite a small place at the junction of two large streams, the Llugwy and the Conway. It is embosomed amongst woods, chiefly the ivy-clad oak, and is surrounded on all sides with pretty high hills rising to 1500 and 2000 feet or so. It is provided with some good hotels—I stayed at the Waterloo, which has the finest situation, and possesses an additional advantage in being owned by a Scotchman.

Several days could be spent in the vicinity of Bettws-y-Coed, exploring the Fairy Glen, listening to the music of the Swallow Falls, or dallying in the vicinity of the romantic Miner's Bridge. The valleys here are narrow and have not much cultivated land in them. The farms, strange to say, are largely on the flat tops of the hills; but the peak of Snowdon seemed to act like a loadstone to draw me on.

The train had hitherto been my conveyance; now it was to be the char-a-banc or stage coach. These coaches have regular routes, north, south, and east of Bettws; they run every day in summer, and are well appointed and make moderate charges. The conductor, who is stationed behind, carries a long trumpet on which he blows frequent blasts,

and at certain places on the Llanberis road the coach is pulled up where a wall of rock runs parallel to it, and quite a treat is afforded by the echo of his stentorian notes.

Snowdon lies due west of Bettws-y-Coed, about 10 miles as the crow flies. To suit its ascent, coaches run to Llanberis and to Beddgelert. I left with the morning coach to the former spot, sending on my traps with the Beddgelert coach, to lie there at the Prince Llewellyn Arms until evening, and this method of seeing Snowdon, and at the same time Llanberis and its famous Slate Quarries, I would strongly recommend to others, as it was entirely successful in my case.

Snowdon rises to an altitude of 3560 feet, the highest peak being known as Y-Wyddfa, the conspicuous. The shape of the entire mountain mass is something like a cross, being composed of four ridges, culminating in the one peak, but each separated by immense gorges or "cwins". These ridges run out from the central peak to the four points of the compass as nearly as may be. The commonest direction from which to make the ascent is from Llanberis due south, on the back of its longest ridge stretching northwards. This road, about five miles long, is a very easy one. Ponies are much used and can be taken the whole way. After lunching at Llanberis, however, and viewing the Slate Quarries (Mr Smith's), I returned to Pen-y-Gwryd, the nearest point to the eastern spur, and within about three miles of the summit, and there descended from the coach, and took to my feet. The sun was setting late in the day ere I rested at Rhyd-ddu, on the other side of the mountain, but between these two points I had to do one of the hottest bits of work one could meet with. The day was intensely sultry, and a slight haze veiled the valleys below; not a breath of wind stirred. Some Dutch ladies, mounted on ponies and accompanied by guides, had preceded me, and I kept the cavalcade in sight as it wound its way along by the small tarn of Llyn Teyrn, and thence still rising by the larger lake Llyn Llydaw. These waters are of a lovely pale blue colour, in contrast with our dark and mossy Scottish lochs.

To the back of the Llyn Llydaw and up the mountain face are several large copper mines; fortunes have been made and lost gambling in their shares. Through the *debris* the path strikes up the face of the hill, zig-zagging as it goes; a marvellous road for ponies and a dangerous one for all. There is no vegetation, simply a barren waste of stones, something like the upper part of Ben Nevis. Through this sterility the path winds its way till it reaches within a few hundred feet of the total height of the mountain, when, with a long sweep to the west, sheltered on the right by the steep rock face, and sloping away down at your feet to the left sheer for 1000 feet or more, it makes for a junction with the road from Llanberis. All the way along this path is but a few feet in width, and a slip here would be fatal. Indeed, one of the disagreeable features of a Snowdon climb is that a guide will point out to one occasionally the presence of a marble cross, where the spot of some melancholy accident is marked out. Never shall I forget the intense heat of that June day as I clambered on, coat on arm, nor the refreshing coolness of that delicious quaff of lemonade in one of the three hostelries on the summit, although I *did* pay a shilling for it!

The view from Snowdon is very extensive, but the haze limited my range to the grand "cwms" or gorges of the mountain itself. Among the numerous points visible may be named:—Precelly (Pembrokeshire), Tara Hill, Ballycreen, Kippure, Hill of Howth and Slieve Donard (Ireland), Holyhead, Berule (Isle of Man), Sca Fell and Black Comb (Cumberland), Ingleborough (Yorkshire), Pendle Hill, Whittle Hill (Lancashire), Axedge (near Buxton), Mowcopt (Cheshire), Cryn-y-Brain (near Llangollen), Longmount (near Church Stretton), Cradle (Brecknockshire), Plynlimmon, Cader Idris, and Aberystwith. The summit of this fine mountain is desecrated with three small restaurants; sleeping accommodation can even be had (bedroom, about the size of a railway compartment, 3s.). Photographs and all sorts of trifles are also on sale. I felt glad to think that the Cairngorms had not yet, nor were likely to be, "tripper-ised" to this extent.

Since my visit, however, Sir Edward Watkin has bought Snowdon; but whether he has pitched these erections over the cliff, or built a new hotel, I have not been able to find out as yet.

After a short halt, I commenced the descent of the mountain by its western shoulder to the lonely terminal station of one of the Welsh narrow-gauge railways, Rhyd-ddu, whence coaches run to Beddgelert, three miles off. This route off the hill is a very peculiar one. For the first half of the descent the position of the path is such that, with a gale from the north, it would be positively dangerous. The ridge is razor-like in sharpness, sloping sheer down to the left, and pretty steep also to the right for some distance down, after which it breaks away to an easy slope. A young school lad, a budding guide, accompanied me on my downward journey, glad to get some news from the outside world, and giving me in return a lesson in Welsh pronunciation. Well on in the afternoon I reached Beddgelert, a strong rival to Bettws-y-Coed for beauty of situation, and after dinner strolled to the outskirts of the village "to muse o'er Gelert's grave". The name of the village is said to have arisen from its near vicinity to this spot—the bed or grave of Gelert. A rude stone under an old tree marks the spot where rests the faithful hound. It is enclosed by a paling, and lies in a green meadow on a lovely path along the bank of the river Glaslyn. Long may it be ere the rude latter-day despoiler of old tradition deprives us of our Gelert.

" And there he hung his horn and spear,
 And there, as evening fell,
 In fancy's ear he oft would hear
 Poor Gelert's dying yell.
 And till great Snowdon's rocks grow old
 And cease the storm to brave,
 The consecrated spot shall hold
 The name of 'Gelert's grave'".

As I passed south to Tremadoc next day I got a lovely view of the Snowdon range. It had a grand effect; indeed, I came quite unprepared for such a Scottish like scene.



SNOWDON FROM LLYN LLYDAU.

Little do we Northerners think how like in many ways Wales is to our native land.

My notes may now end here. I jaunted from Tremadoc to Festiniog on the toy railway—the gauge is as narrow as one foot eleven inches, and the line twists and twines round the sharpest of curves on the face of the steep valley. You sit in open cars back to back, and looking behind can see several sinuous bends on the length of the long train of tiny carriages and slate trucks; indeed, so sharp are those bends that it is said the guard on the rear van going one way can shake hands across the gorge with the engine-driver coming the other way on the same train! I also ran down to Barmouth, a busy sea-bathing resort, and passed back by Dolgelley with its pretty torrent walk (a prolonged Garbh Allt with rather less water and in a more sheltered dell), but Snowdon had been visited and all else seemed tame, and so I quickly returned north, past Bala Lake and on by Corwen and Ruabon to join the London and North Western Railway again at Chester.

EXCURSIONS AND NOTES.

BEINN A' GHLO. This year for the first time our summer excursion lay wholly outside the region from which the Club takes its name. A party of twelve met at the Athole Arms Hotel, Blair Athole, on the evening of 10th July. The programme had been arranged for an early start on the morning of the 11th, and after a drive of over four miles, the day's tramp began at the foot of Carn Liath about 7.30. The ascent of this shapely cone was rather steep, but the ample time allowed for it enabled the company to enjoy judicious halts among the abundant crowberries. From the top of Carn Liath (3193) the range of view was limited to a distance not exceeding 25 miles. The air was very clear in the immediate neighbourhood, and the peculiar features of the Beinn a' Ghlo group presented themselves impressively. The southern height, on which we stood, is like a shapely conical buttress connected with the central summit by a sharp ridge. These sharp connecting ridges, flanked by long steep straight slopes, produce, when close at hand, an impression of boldness and grandeur similar to that which is received from many distant views of the Beinn a' Ghlo group. A descent of 600 feet by the ridge placed us at the foot of the central mountain. Cloudberries almost ripe were gathered here. The climb to Braigh Coire Chruinn-bhagain (3505) is comparatively easy. From the top the circle of vision was enlarged as compared with Carn Liath by the view of Ben Muich Dhuì and his neighbours which were scanned with special interest from this side. The mist was just touching their summits, but the various mountains from Sgoran Dubh to Beinn a' Bhuird were speedily recognised. On this, as on the southern height, quartzite is found as the prevailing rock. A descent of about 700 feet brought us to Bealach an Fhiodha where, good water being found, a halt was called for luncheon. The ascent of the last and chief summit, Carn nan Gabhar (3671), was rather more difficult than the preceding. The view from the cairn to south, west, and north, was a repetition of what had been before us at different stages of the walk, while eastward the mist and rain-clouds gave ominous warning. A meeting of the Club was held—Professor Cameron, D.D., presiding—and one member was admitted with due formality. Soon thereafter a very heavy shower of rain and hail, with threatening mist, compelled a hasty retreat from the exposed summit. The route taken was west to Glas Leathad. Owing to the rain and the stones and heather this steep descent was rather troublesome until Allt Fheannach was reached. Brighter weather and better walking gladdened the company as they proceeded by the right bank of that stream to Glen Tilt. Arriving at Forest

Lodge at 3:30 the party drove to Blair Athole. Aberdeen was reached before midnight, thus completing very comfortably one of the most enjoyable summer outings of the Club.

It is high praise to say of this characteristic group that close acquaintance deepens the impression made upon everyone who has admired from a distance the compact, abrupt, and withal massive peaks of Beinn a' Ghlo.—ROBERT SEMPLE.

that hill of many summits, was the goal set before us
 BENNACHIE, for our autumn excursion on the 25th September.
 The original intention was to leave the train at Monymusk Station, drive through the grounds of Monymusk House to Paradise, and ford the Don. However, on being joined by our Secretary at Dyce, we learned that we must stop short at Kemnay, the ford not being passable owing to recent rains. By this change of programme both Monymusk and Paradise were lost to us—a deprivation which afforded our more facetious members an opportunity for giving vent to time-honoured and well-worn Paradisaic allusions. After nearly a two hours' drive, Dorlethen, a farm a mile S. by E. of Pittodrie House, was reached, and luncheon served. The ascent was thereafter commenced on foot, Mither Tap (1698) being first made for. Although not the highest peak, this is the one most frequently visited, as it stands out far more prominently than any of the other crags, and from most points of view appears to warrant the pretension of its



name. The accompanying view shows Nether Maiden, a mass of rock like a shoulder just below the head of the "Tap", and illustrates the effects of denudation and disintegration in a very striking manner, the weather-worn rock presenting that layer-like appearance which shows

that the original deposits must have been of various degrees of hardness, and that the softer strata had fallen an easier prey than their neighbours to the tooth of time. Looking eastward from the summit, the sea horizon was observed at a distance of over 50 miles, while to the south we had the Deeside hills and to the north the Moray Firth. But we put off our more deliberate survey of the great Bens to the west till we should reach Oxen Craig, the highest point, whither we bent our steps after an hour spent on Mither Tap. The distance between the peaks is barely $1\frac{1}{4}$ miles, and our bolder spirits attempted to cut right across the moor, but landed themselves in a peat bog, and only after a struggle overtook the others, who, plodding by the orthodox paths, had reached the Craig. Here the view is most extensive; and, although the day was not very clear, yet we could easily distinguish many distant mountain peaks. Lochnagar, Ben Avon, Beinn a' Bhuid, and Ben Rinnes were all slightly adorned with snow; while Mount Keen, Morven, Clochnaben, Mount Battock, Hill of Fare, Buck of the Cabrach, Tap o' Noth, and many lesser hills were seen in the nearer distance. We had a smart shower of hail on the top of Oxen Craig; it soon passed over and left the atmosphere clearer.

Below Garbit

Tap—midway between the tops we visited, but a very little to the south—there is an old disused quarry, adjoining which is a ruined “smiddy”. This was for some years the abode of a notorious character, William Jamieson, “the Heddie Craw o' Bennachie”, whose portrait, taken from a sketch by the late Mr. John Stirling, is given here. He was a social outcast, and, of more than local celebrity, acted the part of “bogie man” to all the youngsters round about.



Bidding farewell to Oxen Craig, we descended by the north slope to the scene of a "waterspout" which, about two years ago, tore up a ravine for itself right down the side of the hill. It affords a capital opportunity of observing the extraordinary effects produced by water. It has rendered the peat road quite useless and beyond repair, and so made the direct route from Oyne Station to the summit of the hill impassable in many places. The descent was made to the well-known "Beeches", whence we made our way to the Manse of Oyne, where, by the hospitality of Mrs Mearns, we were entertained to tea. It was a gay scene on the Manse lawn, although the members of the Club may have felt that their mud-stained mountaineering garb was barely in keeping with the appearance of the brilliant company that had met so kindly to make them welcome. Our train from Oyne started at 5'35, and we arrived at Aberdeen shortly before 7 o'clock, from an outing which, although one of the humblest and easiest that could be set down in the programme of a mountaineering club, proved nevertheless a very pleasant and successful excursion.

AN ascent of Ben Avon was made from Crathie, on 8th
 BEN AVON September. The season, which had so far been excep-
 IN tionally favourable for mountaineering, had begun to
 SEPTEMBER. change preparatory to the storm which was experienced
 in the following week. Leaving Crathie about 6'15
 Loch Builg was made for, *via* Corndavon Lodge. The nearest route,
 however, from Crathie, would have been to follow the cart-road to
 Monaltrie Moss and strike the hill there, passing through the sneck
 between Little Culardoch and Tom a' Chuir, and thence make a
 straight line for the top across the Gairn. But, as one is never certain
 of the condition of the moss (at best very heavy walking), and as it was
 the middle of the shooting season, it was decided to keep to the road as
 far as possible. The Loch was reached about 8'35, and, so far, the
 weather looked most promising, although the wind, which, if any at all,
 had been at the start in the west, was now distinctly getting away to
 the north. Leaving Loch Builg Cottage at 9, the slope behind it was
 ascended by a small tortuous path, which was followed for about a
 quarter of a mile after reaching the sky-line, and finally deserted,
 where it meets with another path leading up from the Gairn. At this
 point the hill was taken and a more northerly direction pursued till
 Feith an Laoigh was crossed, when the ascent proper was begun, keep-
 ing Big Brae well to the right. The summit was reached at 10'35.

By this time a marvellous change had taken place. The eastward
 view, including Mount Keen, Mount Battock, Clochnaben, and
 Kerloch, which had been very good during the whole of the ascent, was
 becoming obliterated; and towards the north a huge bank of cloud was
 rapidly advancing, rendering even the hills around Tomintoul almost
 invisible. Only a few of the Perthshire hills could be seen. The only
 satisfactory view was that of Lochnagar which, in itself, was well

worth the journey. It is very marked from Ben Avon, and, perhaps, from all the points from which it can be viewed, this is one of the most pleasing. There one observes to advantage the sharp outline of its summit—its mark of distinction from all the rest of the Grampians—standing out against the sky with a prominence so peculiar to that majestic mountain. But by this time the bright frosty morning had given place to a strong north wind with heavy rain, so that a hasty retreat had to be made. Leaving the top at 10:45 Feith an Laoigh was again made for with all speed, but long before it was reached the storm had burst in full force, and now all around was a combination of wind, rain, sleet, and mist. About noon a rent in the clouds revealed the welcome sight of Loch Builg, which was reached at 12:30 after a battle with the elements, which in these parts must on no account be despised.

—W. GARDEN.

THE PERTSHIRE MOUNTAIN CLUB was founded in 1875, and is an *imperium in imperio* of the Perthshire Society of Natural Science. Only members of that Society who have ascended a Perthshire mountain of at least 3000 feet altitude are eligible. The Cairnmaster is the chief officer, "who, having taken his seat (we frequently read) on the cairn, a number of new members were presented for initiation with the accustomed ceremonies, the Quaighbearer being in attendance with the quaigh". The motto of the Club is "*Salix herbacea floreat*", *Salix herbacea* being the dwarf alpine willow, the smallest British shrub. Among the other office-bearers is the Bard, who has to write a poem "for the occasion". He (Dr Buchanan White) thus rises to the occasion in a poem of 17 stanzas at the Beinn Laoigh excursion :—

"Floreat! members of the mountain clan;
 Floreat! each as individual man;
 Floreat! he who dares do all he can—
 Salix herbacea floreat!
 Farewell! O monarch of surrounding heights—
 Keeper of many hope-inspiring sights;
 Farewell! we leave thee wrapt in evening lights—
 Salix herbacea floreat!"

It should be stated that an account of the Club's work will be found in the "Transactions and Proceedings of the Perthshire Society of Natural Science"—an excellent publication by the way.

SCHICHALLION was one of the mountains visited by a sub-division of the Club party, whose principal objective at the summer excursion was Beinn a' Ghlo. Leaving Aberdeen at 6:50 a.m., Aberfeldy was reached at 11:35, and the walk at once commenced. The distance is 11½ miles, the route being by Coshieville, Strath Appin being left about 7½ miles from Aberfeldy, just below Glengoulandie (a farm), where Allt Mor, a tributary of the Lyon, turns to the south (900 feet), and becomes known as

Keltney Burn. The weather was sultry and thundery, with occasional showers of rain and sleet.

Turning up Gleann Mor, to which Schichallion slopes on the south, we found it heather and bracken-clad, with sheep-paths that were of no little service—the left bank of the stream being kept. At a height of 1550 feet the Farragon Hills came into view behind us. From our direction, the east, the ascent is easy—perhaps rather tedious—being along Aonach Ban, which doubtless has received its name from the quartz that so plentifully bursts out here. Sheep resenting our intrusion stationed themselves on some of the higher rocks, and at a distance conjured up a picture of chamois on the Alps. Hares were not uncommon, and seemed particularly big and plump. At a height of 1850 feet Loch Tummel came within range. When an altitude of about 3000 feet had been reached, we found ourselves on a plateau, with the stony summit of Schichallion superimposed—a mountain literally laid upon a mountain. In another hundred feet, we had commenced to climb the cone, leaving behind a line of miniature stone-shelters, the empty cartridges within showing their purpose. The ascent for the last quarter of an hour required the careful picking of one's route among the rocks. *The* cairn is a very small one—some four feet high—but the rocky cone-shaped summit little requires a distinguishing mark.

The view from Schichallion (3547) is at no time so fine as one would naturally expect; in such weather as had just been experienced little was anticipated. It was now (6 o'clock) a glorious evening, and a pleasant time was spent on the summit. It was readily seen that both the north and south faces of the mountain were particularly steep—the former much scree-covered. The western slope towards Loch Rannoch—which lay spread below us—seemed a little steeper than the eastern. A family of snow buntings was seen at the cairn. Looking across Gleann Mor, a shepherd's hut could be observed perched on the northern slope of Carn Mairg. That glen was quite green at the top, with Allt Mor flowing peacefully along, quite different from its rocky channel lower down. The valley of the Tummel, also, seemed exceedingly green, the strath looking magnificent.

The descent was made by the north face, 1100 feet being negotiated at an angle of 35°. At that inclination the loose small scree is ready to come down with the mountaineer. The summit was scarcely left when the mist seemed to settle there, but Strath Tummel below was still in a smiling atmosphere. The road between Aberfeldy and Kinloch Rannoch (18 miles) was struck near the 13—5 milestone, at a height of about 1200 feet, a few yards to the west of a dyke up Schichallion that there divides the parishes of Fortingall and Dull. Looking up to the isolated mass of Schichallion, the cone was once more free of mist, but clouds swept gracefully westward about 500 feet below the summit. The walk along the solitary moorland road—for houses are

here a rarity—afforded a capital view of the peak we had just left, as well as of Beinn a' Ghlo and Ben Vrackie in the distance. At 8:30 we reached White Bridge Inn, midway between Aberfeldy and Kinloch Rannoch and $4\frac{1}{2}$ miles from Tummel Bridge. The "Inn", it should be mentioned, is one of the smallest, and contains only one "spare" bed.

A MAGNIFICENT July day found our party at Dufftown MEIKLE *en route* for the Cabrach. The drive up the lower part FIRBRIGGS. of Glen Fiddich, past the ruins of Auchindoun Castle (a seat of the Huntly Gordons), and along the excellent turnpike road among the bonnie Birks of Laggan, was fitted to charm anyone with the least spark of the love of nature in his being. Crossing the Fiddich at the point where it emerges from Glen Fiddich Forest the road leads upward by a rather steep ascent till we reach the Glacks of Balloch—a deep "slochd" in the ridge which separates the basin of the Deveron-Blackwater from that of the Fiddich, and also forms the boundary between the parishes of Mortlach and Cabrach.

Looking behind us a splendid panorama presents itself—ridge upon ridge of heath-clad hills retiring towards the west, with Ben Rinnes raising his bold storm-swept head above all. Resuming our journey the descent towards the Deveron began. "Roy's Wife of Aldivalloch" naturally became our companion "As we gaed ower the Braes o' Balloch". (*En passant* we may remark that when we visited Aldivalloch the only trace of this fickle dame was a massive block of a "heathen" that was used as Roy's hearth-stone.) The view as we descended towards the Deveron was not specially attractive, the country being almost devoid of trees. Old friends, the Tap o' Noth and the Buck, are near at hand, and hills of brown heath with patches of cultivated land are the prevailing feature of the landscape.

Arrived at Ardwell (almost on the 1000 feet line of altitude), and the inner man replenished, we wended our way up the hill path leading to the top of Meikle Firbriggs (1776), which, we were assured, and afterwards verified, commanded the finest and most extensive view of any hill in the vicinity. Meikle Firbriggs is part of the ridge that separates the basin of the Allt-Deveron from that of its main upper tributary, the Blackwater. This ridge is a spur of the larger Cook's Cairn ridge which forms the watershed between the Deveron and Spey basins. Branching off from the main range at Cairnbrallan, the Meikle Firbriggs ridge runs north-eastward in a wavy line for a distance of about ten miles, gradually decreasing in elevation till it sinks into the knolls at the junction of the Deveron and Blackwater. The summit was reached after a leisurely walk of barely an hour, having paused frequently on the way upward to admire the opening landscape. Looking westward from the summit, at our feet lay Blackwater Forest, treeless with the exception of a clump that encircles the Lodge; and not another human habitation is to be found in the long glen, though the time was when the haughs of the Blackwater were the home of

many a thrifty crofter. One green plat by the riverside marks the spot where the miller ground the corn ; another, the Priest's Haugh, where lived the priest who ministered to the spiritual wants of a by no means scant population, and yet did not consider it *infra dig.* to assist the miller in his work. Here, too, one of Scotland's kings found a night's lodging when his day's hunting in the Forest was over. The forest is now the home of red deer, hundreds of which we saw browsing on the slopes of the hills. Beyond the Blackwater is the Cook's Cairn range which rises very abruptly from the river to a height of over 2000 feet, and slopes even more abruptly down to the Fiddich on its western side ; and away to the north-westward Ben Rinnes is seen in bold rugged outline rising above his fellows. To the south-westward, looking over the left shoulder of Cook's Cairn and the right shoulder of Cairnbrallan down the Livet glen, away in the far distance, we had a clear view of the Cairngorm group with patches of snow relieving the grey.

Turning now to the south and south-east, at our feet lies the Upper Cabrach, a circular hollow almost completely shut in by ridges of hills, the Buck standing out boldly above the rest. A glance at this district with its combination of numerous streams running in deeply-cut channels, and its stretches of moss and moor, explains the Deveron floods, which not only come down at times in extraordinary volume, but also continue to run high for days after the rains have ceased. When the height of Upper Cabrach above sea level and its northerly aspect are taken into consideration it is surprising to find in this district so many nice steadings of seemingly well-to-do farmers. The lack of trees causes no wonder. At the foot of the hill, but hidden from view by a minor spur, lies Aldivalloch—a hamlet of some half dozen houses, and close by it is a mineral well whose waters are neither sweet to the taste nor pleasant to the olfactory sense. Due east, about eight miles distant as the crow flies, but apparently much nearer, is Tap o' Noth, which from this point is very much like Arthur Seat from Calton Hill—a lion couchant. To his right, in the far distance, is Bennachie, Mither Tap standing out boldly against the sky. Looking now to the north-east, down the Deveron valley, at our feet opens out the Lower Cabrach, the winding reaches of the river visible as far as the parish of Glass. Here the banks of the river at various points are beautified by belts of birch, hazel, arn, and mountain ash. Far in the distance lies the Knock Hill, and beyond, on its left, is Cullen Bin. To the north-west the Glacks of Balloch form a striking feature in the ridge that here shuts in the Lower Cabrach. The road here reaches an elevation of over 1100 feet. Close at hand lies Dufftown (seven miles off) the tops of the houses looking out among the trees, and backed by Ben Aigan, with the beautifully wooded Glen of Rothes on its left ; and away beyond, clearly visible, is the Pap of Caithness. Till recently the Cabrach was almost inaccessible ; roads bad, bridges non-existent.

Now excellent roads from three sides make the approach to it easy by carriage or cycle, and the district is a veritable paradise for the angler : no restriction as to fishing, and as for fish—well, I had better not begin!
—ALEXANDER FORBES.

in mist was made about the end of July, 1870, by B. and the writer, starting from Castleton. As far as
A Derry Lodge we were all right, but beyond that we
NIGHT ASCENT OF CAIRN TOUL knew little of the route (there were then no O.S. maps), but we had a considerable amount of self-reliance and determination. We were, besides, in pretty good form, having been mountaineering for several days on Lochnagar, Ben Avon, Beinn a' Bhuid, &c. The evening was fine, but a somewhat uniform layer of clouds looked suspiciously low ; however, off we set about eight o'clock. All went well till having passed Old Mar Lodge the mist was entered. This was what we most feared, as it would obscure the outlines of the hills, so that on getting into Glen Dee there would be no guide. On reaching the Derry a mistake was made. We crossed the Lui Beg water. This led us into a wood, through which, for some distance westward, there was a fairly good path, but which by and by vanished. However, we pushed on, and at last got "out of the wood", and found the track leading to Glen Dee. The mist was now very close and dense, but it did not seem to reach very high, for through occasional openings the stars could be seen. This was hopeful. Entering Glen Dee, we kept on till we thought we must be opposite Cairn Toul. It was too dark to search for an easy place to cross the Dee, so we made direct for the river, and into it. A few galvanic batteries would have been commonplace to the sensation then experienced ! The intense cold water, fresh from the melting snows, and the sharp angular gravel at the bottom, made this crossing quite an experience for one's poor feet. We went straight up the slope at right angles to the river, a route which shortly led to smooth perpendicular rock. Moving northwards, and keeping close to the rock, the conviction deepened that we were tracing the south spur of our mountain. By and by the rock curved inwards, and still keeping close to it, we found ourselves in what was evidently a large corrie filled with very dense mist. Hugging the rock, now much broken, we reached the inner extremity of the corrie, where, to our delight, a zig-zag footpath was found—and followed. When about half the ascent was accomplished, we suddenly put our heads through the mist. The effect was magical. The sky was clear as crystal, with a few stars still visible in the early twilight. The mist lay stretched below like a silver sea, and extended as far as the eye could reach—the tops of the hills so many islands in it. Looking at it more closely, it was seen to be corrugated like the waves of the ocean. The illusion was perfect, for where it met a projecting part of a hill, there a little cloud of spray rose, and later, when the level rays of the rising sun struck the waves, their shadows could be faintly but

plainly seen projected upon each other. "A thing of beauty is a joy for ever", and this was a scene never to be forgotten by the two who witnessed it. Our difficulties were all resolved now, and we soon reached the cairn on the highest peak of Cairn Toul, where we stayed till sunrise. The cold was intense, and as it was evident that Braeriach was a little higher than our station, we set off at once for it while the atmosphere was still crisp and clear. The cairn was reached about six o'clock. By this time the mist had disappeared, and the view was superb. Never in all my wanderings have I enjoyed a finer. It was something to see every hill of any consequence from Caithness to Perthshire, and beyond it. Warm and pleasant now, it was delightful to recline on the summit of that noble mountain and look around. But by nine o'clock the heat haze had set in, and one could not see half a dozen miles away, and even that distance very indistinctly. Some time was spent examining the rise and progress of the infant Dee, from its "Wells" to where it disappears under an arch of snow, and takes a breakneck leap down the great precipice. After a while we picked our way down to the Pools of Dee, reaching Braemar about eight o'clock, after a most enjoyable excursion.

The main reason for writing this note was to call attention to the peculiar appearances presented by mist. These are often remarkable, and mountaineers have exceptionally good chances of observing them. If they would record what they see, interesting and valuable results might follow. Everything has not yet been found out about mist. I should be glad to see an explanation of the following extraordinary appearance which I observed about half a century ago, but is as clearly imprinted on my memory as if it had occurred last night. Late in the afternoon of a dull October day—cloudy, but without wind—I had occasion to go to the top of a ridge 1500-1800 feet high, which separated our place from the next glen to the north. From my point of view, this glen narrowed westwards for a mile or two, then widened again—eastwards it gradually widened out into a strath four or five miles off, where a low ridge partly crossed it. The ridge on the north side of the glen was rather higher, 1900 feet, or thereby. Now for what I saw on gaining the summit. Near what may be called the margin of the basin on the other side, a pretty large globular, or nearly globular, mass of mist was moving rapidly down the glen (eastward), while immediately in front of it were three or four considerably smaller pieces, elliptical in outline, arranged in line, end to end, with a short space between, while all maintained the same uniform rate, kept the same distance apart, and neither got higher nor lower. On reaching the low ridge spoken of, they turned aside to the south, then turned up the valley, and swept past where I was standing, and so on to the narrow part of the glen, where they crossed over to the north side, and went on as before. This was the behaviour of one group, but there were at least half a dozen groups all acting in precisely the same

way, and dividing the circumference of the basin pretty equally among them. On fully taking in the scene I was spellbound, and stood rooted to the spot. It was both awe-inspiring and eerie. Even my dog was affected by it, and kept close to heel all the time. Such a display of power in the rapid movement of the masses, and yet no sound, nor even a breath of wind! Well, well, let meteorologists explain. Gathering darkness reminded me I had other work to attend to, and reluctantly I dragged myself away.—JOHN ROY, LL.D.

To most Scottish climbers there can be little new in this account of a tramp from Speyside to the head of Dee, CAIRNGORMS but there may be beginners, like ourselves, to whom IN MIST. the record may be of use. In order to have as much time on the hills as possible, we arranged to stay overnight at Coylum Bridge, which, lying as it does, at the threshold of the hill district, forms an ideal starting-point for climbers.

The previous day had been one of singular clearness, but the hopes raised thereby were doomed to disappointment, for the watery brilliance of the sunrise foreboded midday mists and possible rain. We got away at 6:30 and made a good start by crossing the first bridge over the burn, thus landing ourselves in an extensive peat bog and entailing a mile or so of very heavy heather tramping. We, however, regained the path at the point where it crosses at the third bridge, which should have been our crossing point. On emerging from the Rothiemurchus woods upon the higher ground a fine rain was falling, and the Larig was already filled with rolling mist-wreaths. The rain soon cleared off, however, and we enjoyed exquisite views of Strathspey before the mist closed down upon us.



We reached the summit of the Pass (2750) at 9.45, and after visiting the Pools of Dee, which we found rather disappointing, owing, no doubt, to the long drought, we made what we reckoned a bee-line for the top of Ben Muich Dhui from the lowest of the series. On gaining the first plateau, that to the north of the Ben, as we learned later, our troubles began. It was now impossible to see more than fifty feet ahead, and although the ground appeared to fall on all sides, it seemed unlikely that we could yet be at the top. Besides there was no cairn to be found, notwithstanding exhaustive efforts to discover one; we therefore decided to go on in what seemed the right direction, in the hope, at least, of finding some recognisable feature. This we did in the shape of Lochan Buidhe, but which we should certainly have mistaken for Lochan Uaine had we not had a guide book with us for reference. By good luck, a momentary rift in the mist revealed Cairngorm, and from this point, by the aid of the compass, the way was easy, and we quickly found the lower cairn and then the summit itself (4296) at 1.30. Here there was little to tempt us to linger in the soaking mist and keen east wind, there being no prospect of a view. We therefore left the cairn almost immediately, making for Loch Avon in as straight a course as we could steer, enjoying at times momentary glimpses of the Larig through seething mist, and at others catching sight of Loch Etchachan lying under the blackest of shadows. On emerging from the mist a thousand feet lower, we had the satisfaction to find that we were directly over the head of the loch. We scrambled down amongst the rocks and waterfalls of the Garbh Uisge, stopping halfway at the foot of a long slide to enjoy a refreshing "paiddle". The water was intensely cold, coming partly from a great mass of snow, which we had traversed on the way.

The next item in our programme was, of course, a visit to the famous Stone, and here we met two fellow-pilgrims, the first since leaving Rothiemurchus. They had walked during the previous night from the Don and purposed staying overnight at the loch to climb the Ben for sunrise. We made "interchange of gifts", and found nothing incongruous in the steaming cups of Van Houten which they offered. They were anxious for us to lend them company, but our plans for next day made this impossible, so, after an hour's rest, we set off (4.30) down the loch, which in its beauty and solitude surpassed our highest expectations. The tramp to the watershed of Glen Derry (6.30) was perhaps the roughest encountered, and until within three miles of Derry Lodge the ground was extremely heavy. After joining the Coire Etchachan track and getting on the level grass-land, we put on pace, overtaking two courageous lady-climbers, who in spite of mists had done the Ben. As we passed Derry Lodge (8.0) we were not sorry to learn that the Linn of Dee was only four miles off, and now on a good road we soon reached the dwellings of men and most comfortable quarters for the night.—T. J. CROMBIE, A. WEBSTER PEACOCK.

20th September, 1893. My dear Sir,—I send you and all fellow-Cairngormers compliments from this altitude. I have been living for a week in Denver, which is as high as Ben Muich Dhui. Have come up here on the cog railway. Beautiful day and extensive view ; great range of the Rocky Mountains on one side, and wide expanse of prairie (like a sea) on the other.—ROBERT ANDERSON.

REVIEWS.

MOUNTAIN- by CLAUDE WILSON, M.D. (London : George Bell and
EERING, Sons. Price, 2s.). The issue of Mr. C. T. Dent's work on "Mountaineering" in the Badminton Series, in the summer of 1892, marked a new departure in the literature of the sport. Up to that time he who would be a mountaineer had to cull his information for himself about peaks, passes, and glaciers from the pages of that most brilliant band of writers, who were at once the pioneers and the historians of the first ascents. The impulse of the writings of such men as Forbes, Ball, Leslie Stephen, Tyndall, Kennedy, Wills, and Whymper has sent many a man to the Alps to acquire his mountain craft by practical work on peak and pass, and at the hands of his guides. One can no more become a mountaineer without climbing than one can become a swimmer without entering the water, but the path to proficiency may be considerably smoothed and shortened by such books as the one we have already mentioned, and the excellent little work before us, the latest of "The All-England Series".

Dr. Wilson's book is a marvel of skilful condensation, a condensation arrived at, however, without any sacrifice of lucidity or of literary quality. Its most characteristic chapters are those on the "Dangers of Mountaineering", on "Guides", and on "Outfit". Special mention must also be made of the summaries throughout the volume and of the excellent code of rules. The writer professedly addresses his book to beginners, and logically, we think, places in the forefront of it his remarks on the "Dangers of Mountaineering" and "Guides".

It has become too much the fashion of recent years for men of no previous climbing experience to attack the higher and more difficult peaks, mainly for the purpose of saying that they had "done" such and such a mountain. The behaviour of such so-called climbers, during what they are pleased to call their ascent, is often at utter variance with their tall talk afterwards when they have reached the safety of their hotel. Such exploits as these are reprehensible enough when done in the company of competent guides, who may be expected to take all due precautions ; but the true history of almost every alpine accident tells of the criminal neglect of one or other of those safe-

guards, without the observance of which mountaineering becomes sheer foolhardiness. The general public learn only that an accident has taken place, and straightway condemn the whole pursuit. To quote from the book itself :—"Turn a man loose on a spirited hunter before he is able to ride, or push him into deep water before he is able to swim, or send him skating before the ice will bear, and we have examples of dangers by no means inherent in the sports with which they are connected, but which are quite on a par with risks very frequently run on the Alps".

Dr. Wilson deals exhaustively with mountaineering dangers under the three heads of :—Self-made dangers (which should never be incurred) ; dangers to which all climbers may be exposed, but which can be avoided or provided for ; and dangers which are sometimes unavoidable. These last are only of two kinds—sudden storms and falling stones. Practically all the others may be provided for by skill and experience, and for these essentials the beginner is mainly in the hands of his guides.

The average Swiss guide is in many respects a very fine fellow, but some little acquaintance with him is needful to be able to assign to his qualities their true proportion. Almost every tyro comes back from his first ascent with a very much inflated idea of the difficulties he has overcome, and a correspondingly exalted estimation of the skill and resources of his guides. The result is usually a very highly-coloured and flattering testimonial, and the guide who may be only quite an ordinary man is passed on to the next beginner as a paragon of mountaineering ability.

When so much depends on the proper selection of guides, Dr. Wilson's remarks on this head must be regarded as among the most valuable in the volume, whose other outstanding features are its list of Alpine Books, and its excellent and practical information on Outfit, much of which will be found very applicable to the conditions of Scottish mountaineering.

We have purposely left to the last a reference to the chapter on "Mountaineering in Great Britain" to remark that, while the amount of space devoted to it is no doubt in correct proportion in a book on general mountaineering, the great interest now taken in the pursuit in this country, and the considerable body of literature that is rapidly springing up around the subject, may soon lead to the production of a book entirely devoted to mountain climbing in Great Britain.

(Glasgow : Morison Brothers. Price, 1s., 1s. 6d.) has for full title, "Our Western Hills : How to reach them ; And the Views from their Summits". The promise in the title is well redeemed, for the author (who conceals his identity under the pseudonym of "A Glasgow Pedestrian") has an observant eye, and as he walks or climbs, or rests on the summit, discourses most pleasantly. The author writes *con amore* ; he is full of his subject, and nothing escapes

OUR
WESTERN
HILLS

him from a spider to a stag. The hills visited are Loudon, Tinto, Cairntable, Ballagioch, Kaim, Goatfell, Earl's Seat, Dunmyat, Ben Donich, Ben Venue, the Cobbler, Ben Lomond, Mount Misery, Ben Ledi, and the Meikle Ben. The proofs might have been read a little more carefully, and thus such blunders as two different heights for the same mountain (as in the cases of Ben Cruachan and Ben Ledi) would not have occurred. Ben Lawers, the Ochils, West Lomond, the Pentlands, and the Isle of Man should be added to the view from Goatfell.

of the United Kingdom, by Lieut.-Col. WHITE, R.E.
 THE (Edinburgh: Wm. Blackwood & Sons. Price, 5s.).
 ORDNANCE This is a peculiarly interesting volume to mountaineers.
 SURVEY It is full of interesting and useful information regard-

ing map making, and gives a charming sketch of what our French neighbours call "the model survey for all the civilised nations of the earth". It is difficult to fancy a hillman of to-day without his O.S. map—on serious or particular work he scorns all "reductions"—but, nevertheless, one cannot help remarking that, to many of us, there would have been a charm in exploring the mountainous regions of our country with the deficient and wonderfully inaccurate maps of former times. In "The Ordnance Survey of the United Kingdom", Colonel White's aim, as he modestly puts it, "has been to convey to general readers an intelligible idea of our National Survey, without over-burdening them with technical details. In this sense the book is intended to be a short popular account of what might seem at first sight a dry, scientific subject, suited only for experts".

The idea of the Survey originated at the time of the Jacobite Rebellion of '45, and began to take practical shape in 1747, and has been carried on, in spite of frequent interruptions, to its complete realisation to-day. It was a military undertaking, and was consequently interrupted again and again by our foreign wars, by consequent lack of money, by want of interest on the part of our rulers, and by the active opposition of civil engineers, who believed that their occupation was gone when the military had undertaken the gigantic task of mapping our islands. Up to 1855 the State Department under which the National Survey was conducted was the Honourable Board of Ordnance, and the directors of the Survey were immediately responsible to that Board. Hence the name "Ordnance Survey". On the abolition of that Board, the control of the Survey passed to the War Office, with which it remained until 1870, when it was transferred to H.M.'s Office of Works.

The general principles of Geodetic Survey are simple enough in theory, but in practice they are surrounded by many difficulties. A measured base line of some length is the first necessity, and upon its accurate measurement depends the value of the entire work. The base

line is measured either by Gunter's chain, by 6 feet rods of glass, wood, or steel, or by General Colby's compensating bars. This is a most laborious task. The rods are first placed in a straight line, almost, but not altogether, touching each other, and levelled with the utmost exactitude. The distances between the rods are then carefully measured by means of microscopes with micrometer attachments, and the sum of these distances added to the lengths of the rods used, allowance having been made for expansion by heat. The rods are 6 feet only when the temperature is 65° Fah., and corrections must be made when the temperature either rises above, or falls below, that point.

The base lines from which all the trigonometrical distances have been computed are those which were measured on Salisbury Plain and on the shores of Loch Foyle in Ireland. They are respectively 6.93 and 7.89 miles in length, and the difference between the measured lengths and their lengths as computed by triangulation is only about five inches. Several other base lines were measured to check results, one being at Belhelvie in Aberdeenshire.

The base line having been successfully measured, it might seem a very simple matter to determine, by means of instruments, the angles made by this line with lines drawn from each of its ends to some distant point, and to calculate by trigonometrical methods the lengths of the two sides of the triangle thus formed. And then, by using each of these sides as bases, to go on forming a series of triangles which shall include every important point in our island, and stretch like a network from shore to shore. If the earth were a plane this would certainly be comparatively easy; nay, if it were a perfect sphere the measurement would still be one which care and a knowledge of spherical trigonometry could well accomplish; but the earth being an oblate spheroid of very irregular surface, the difficulty of the problem presented is greatly enhanced. The sides of the triangles are not straight lines, but spheroidal curves, and though the sum of the angles of all plane triangles amounts to two right angles, the angles of these triangles amount to more, and the calculation of the lengths of these sides and the enclosed areas becomes a matter of some difficulty. Various modes of solution have been used, but of late Legendre's Method has met with general acceptance on account of its marvellous simplicity.

The points selected for the angles of these mighty triangles are at different elevations, and this necessitates the reduction of all to some general fixed level. The level adopted is mean sea level, or the level of the sea at half-tide. But, as half-tide differs in height at different places around our shores, the height at Liverpool has been taken as the starting-point for all measurements of elevation, and all the trigonometrical triangles have been reduced to that level. In calculating the heights of distant objects the curvature of the earth has to be taken into account, else the measured heights would be less than the real, and

we must not forget the effect of refraction of the rays of light which makes objects near the horizon appear higher than they should. This refraction is not a constant quantity, but varies with the changes of the density of the air due to temperature and the presence of water vapour.

The placing of the trigonometrical instruments in a true vertical position is another difficulty, as the attraction of the mountain masses on the plumb line renders it unreliable unless its indications have been corrected by astronomical observations. Again, the instruments themselves, though very fine, are not perfect, and errors creep in through imperfect graduation and eccentricity. Even the observers' temperaments are taken into account in all observations made by them. It will thus be seen that a geodetical survey is no light matter, and requires vast care, unlimited patience, and the highest practical skill.

"One is rather inclined to envy the workers in the old days of the Great Trig., perched the most part of their time on the summits of remote mountain ranges. These men were in a sense the giants of the survey. They had their privations to encounter, but they had also their compensations. The marvellous, multiform aspects of nature so often presented to them must have been a study indeed. The lonely day and night watches—intent eyes ever on the outlook for a break in the clouds and the distant signal—the utter isolation for months from the lower world—snows and severe hailstorms at times assailing, even in early summer, the solitary camp—or furious gales, such as that which one dark night in a wild district of Derry blew down the men's tents and forced Colby to dismount the great theodolite—these episodes and experiences, notwithstanding their occasional discomforts, must, it has always seemed to me, if aught could do so, have touched the mechanical tasks of the operators with something of the gilding of the picturesque, if not the romantic, and have raised their souls for the time being above the monotony which is apt to wait upon a cut-and-dried repetition of any mere scientific detail".

The primary triangulation was finished in 1852, and occupied between 60 and 70 years. The sum of all the distances or sides in the principal triangulation is about 206,710,000 feet, or, in round numbers, five times the diameter of the earth. The average length of side is 35·4 miles, and the greatest side measured was from Slieve Donard to Sca Fell, a distance of 111 miles. Secondary triangles were then interpolated within the great triangles, having bases of lengths down to 5 miles. And, finally, tertiary triangles were plotted within those secondary triangles, and the work of the ordinary land measurer then began. Maps were then made from these plans, and, by the employment of photo-zincography, maps on various scales were produced, of wonderful accuracy, marvellous cheapness, and with great rapidity.

It may be interesting to know the various scales upon which Ordnance Survey maps are made. These are :—

1. Town maps—scale 127 in. to 1 mile.
2. The true cadastral or property map—scale 25 in. to 1 mile.
3. The county map—scale 6 in. to 1 mile.
4. The military or geographical map—scale 1 in. to 1 mile.

The observations necessary to determine the contour lines on these maps were very numerous, and called for the greatest care, patience, and exactitude. These contour lines tell us many facts about our country. They point out the gentle and the steep slopes. They show us the coast lines that would result if the ocean were to rise or the land to sink any definite number of feet. Our sea-shore is a clearly-defined natural contour line. These contour lines have been determined by the spirit level and the theodolite, and the great accuracy with which the work has been accomplished may be gathered from the fact that the height of Ben Muich Dhui derived by levelling up the western side was 4295·70 feet, by levelling down the eastern side 4295·76 feet, while the computed height was 4295·6 feet.

by MALCOLM FERGUSON (Glasgow : T. Murray & Son. Price, 3s. 6d.), appeals to all lovers of nature generally and to Breadalbane men in particular. The sketches and reminiscences form pleasant reading ; they are distinctly Highland. The author is not a "mountaineer" as the Clubs regard that term, but he is evidently a lover of mountains, as frequent references shew. We are indebted to him, moreover, for the present cairn on Ben Lawers. The one built by the Royal Engineers (about 1845) had fallen into decay, so in the summer of 1878 he, with the assistance of a few friends, erected a new cairn. It measures from 45 to 50 feet round the base and is about 20 feet in height. Its construction was superintended by Mr. Ferguson himself, who had summoned to the top about thirty Highlanders from Glen Lyon and Loch Tay-side. As becomes a native of Breadalbane, he has a "guid conceit" of its mountain. "Ben Lawers, or, in Gaelic, *Beinn Latha-Ur* (the mountain of the new day), is situated as near as may be in the centre of Scotland—about equi-distant from John o' Groat's and the Mull of Galloway, the Atlantic and the German Ocean. It is generally admitted by many competent authorities that there is no mountain in Scotland that can compete with Ben Lawers for the extent, variety, and grandeur of the view to be obtained in a clear day from its lofty summit". So the Cairngorm Club must get there. The book has half a dozen illustrations, of which the best is a portrait of the author.

for September completes Vol. II. No. 1, of Vol. I., was issued in January, 1890, the Scottish Mountaineering Club, of which it is the organ, having been formally instituted on 12th December, 1889, the journal since appearing regularly three times a year. The two bound volumes lie beside us as we write, and we confess, as a mountaineer and a member of the S.M.C., to not a little

pride, as well as pleasure, in handling them. They reflect great credit to all concerned in their get-up; suffice it to express the hope that the Cairngorm Club will be able to follow—it may be at some distance—such a lead. Vol. I. is edited by Mr. Joseph Gibson Stott, now removed to New Zealand, Vol. II. by Mr. David Douglas, a keenly enthusiastic mountaineer, and otherwise quite in the proper place in the editor's chair. The local agents are D. Wyllie & Son, and the price 1s. per number.

(Inverness: *Northern Chronicle* Office. Price 1s.), having reached the twelfth edition, has almost placed itself beyond criticism. It deals with a big district—giving an account also of the Caledonian Canal, Skye, the Long Island, the West Coast, and the Orkneys—taking one into the most retired haunts of the mountaineer. From personal experience (and discomfort) we must, however, object to the observation that the Shelter Stone “can now contain only about a dozen”. The Cairngorms receive due attention, but we expect better things from the Gaelic capital than such monstrosities as “Ben-na-main”, &c. We hope to see the thirteenth edition reduce the length of Loch Erich, here given as 17 miles. The “Handbook” has a map and a good few illustrations, as well as a useful index.

by ALEX. INKSON M'CONNOCHIE (Aberdeen: D. Wyllie and DEESIDE, Son. Price, 1s., 2s.). “In this little volume Mr. M'Connochie displays those facile powers of description and the painstaking detail which have rendered popular former works from his pen. After devoting some space to a general description of the Dee, he begins with Aberdeen, at its mouth, and afterwards conducts the reader up Deeside to the source of the stream. The volume is of handy pocket size, and has a good map and full index.”—*The Scottish Geographical Magazine*.

by J. A. HARVIE-BROWN, F.R.S.E., F.Z.S., and J. NATURALIST'S G. BARTHOLOMEW, F.R.G.S., F.R.S.E. (Edinburgh: MAP OF John Bartholomew & Co. Price, 2s. 6d., 3s. 6d.) SCOTLAND, This is the fourth map published by the same firm, all on the same scale—10 miles to an inch—indispensable for reference by the Scottish tourist, whether mountain, lowland, or coasting, in acquiring a general knowledge of the physical aspects of the land and the surrounding sea, and their relation to plants, animals, and man. This map presents in one view, by various colours and shadings, many particulars of great interest to the naturalist proper, as well as to the agriculturist, shepherd, fisherman, seaman, and sportsman—all of whom, to follow their occupations with intelligence and profit, must be more or less naturalists. Among the many interesting facts shown, we have only room to refer to the following:—Of the area of Scotland only a fourth of the surface is occupied by cultivated land, and only a twenty-third by woodland, the

rest of the surface consisting of moorland, hill pasture, and other uncultivated tracts. The cultivated land is nearly confined to the middle and south of Scotland, Eastern Aberdeenshire, and the borders of the Moray Firth. The woodland occurs in comparatively small patches, mostly along rivers, and near the Cromarty and Dornoch Firths. There is much more woodland in the Eastern half of the country than in the Western. By different colours and shading the map exhibits the area of land surface in Scotland over 1000 and 2000 feet above the sea; the depth of the surrounding sea; the breadth of sea-shore between high and low water; the coast limit within which beam trawling is prohibited; the chief salmon rivers; areas of deer forests; the faunal divisions based on watersheds or river basins; and salmon rivers and lochs.

MAP OF
INVERNESS
AND SPEY
DISTRICT,

2 miles to an inch, by JOHN BARTHOLOMEW (Edinburgh: John Bartholomew & Co. Price, 1s., 2s.), is marked by the usual care which that map-expert gives to all his productions. It, however, does not particularly appeal to the mountaineer, no "Munro's" being included in this district, Ben Rinnes towering over all.

Parishes are named in this edition. We observe, however, that the railway from Rothes to Orton direct still finds a place "as a going concern", though fast returning to nature, while the Hopeman branch is not indicated.

MAPS
OF THE
LAKE DISTRICTS.

Messrs. W. & A. K. Johnston, Edinburgh, have issued a set of three maps of the Lake Districts of the three Kingdoms. The maps are as neatly turned out as one could wish, and give a comprehensive idea of the districts delineated. They are mounted on cloth, coloured, and folded up in a very neat manner, and the price (1s. each) is exceedingly moderate. Loch Lomond, of course, is given as the centre of the Scottish lake district, which naturally is not so easily defined as those of the sister Kingdoms.

SCOTTISH
HIGHLANDS
AND
ISLANDS

is the title of one of Ward, Lock, & Bowden, Limited's, illustrated 1s. Guide Books. These guides are most wonderful value for the money, and to one who merely wishes a comprehensive view of the country are unsurpassed. Indeed, our only fault with the present volume is that it attempts too much, and thus blunders occasionally creep in. We demur to the statements that "Loch Alvie is nine miles in circumference"; that "three counties meet at the foot of Glas Maol"; that the Dee is crossed at Abergeldie by "a handsome stone bridge"; and that Abergeldie Castle is "the seat of the Prince of Wales". Then we are told that the Don "rises on the slopes of Ben Avon", neither an original nor a felicitous expression; and that "Alford is a pleasant little village in the heart of the Cairngorm mountains".

In Memoriam.

As we go to press the death is intimated of Mr. JOHN ROY, LL.D. Dr. Roy was an original member of the Club, as well as of the committee, in the prosperity of which he was much interested. During his last illness he wrote for the JOURNAL "A Night Ascent of Cairn Toul", which appears at page 104, and had also in preparation an exhaustive article on the botany of the Cairngorms. A native of Perthshire, Dr. Roy had filled the post of Cairnmaster of the Perthshire Mountain Club (see page 100). He was of a scientific turn of mind, being a most accomplished devotee of Natural Science, but withal of such a shrinking modesty that his great attainments were known to comparatively few. He had an extensive astronomical knowledge, but it is by his researches in botany—particularly in connection with Desmidiæ, on which he is the recognised authority—that his name will be best remembered.

The following articles have been crowded out, but will appear in the July number :—THE EASTERN CAIRNGORMS, by the Editor ; and A HILL WALK IN NORWAY, by John Geddie, F.R.G.S. ; also, Review of a "Guide to Ben Nevis" issued by the Observatory Authorities and sold by J. Menzies & Co., Edinburgh (price, 1s.)



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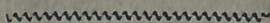


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